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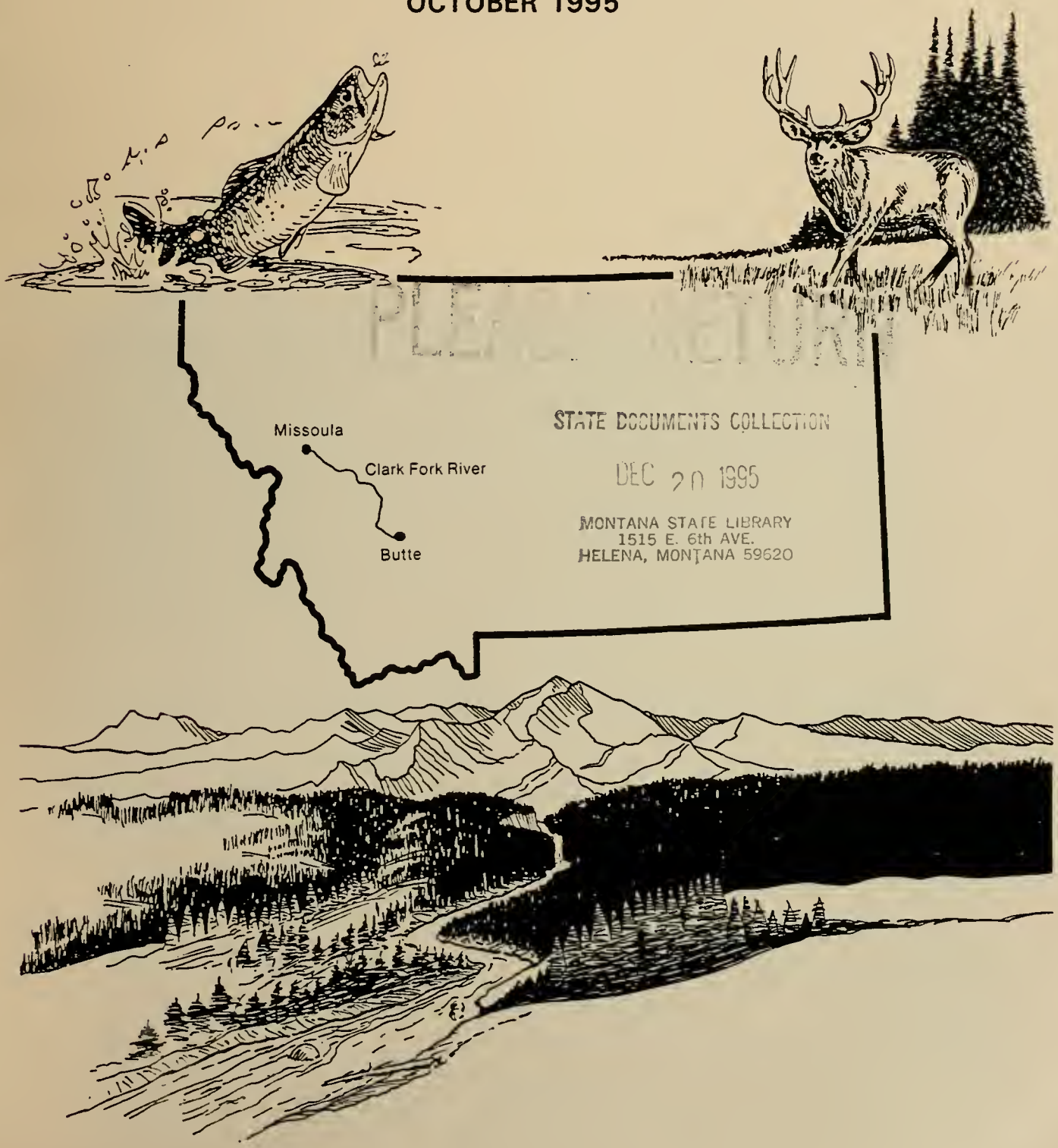
Responses to comments on restoration determination plan issued January 1995 Clark Fork River Basin NPL

STATE OF MONTANA
RESOURCE DAMAGE PROGRAM

RESPONSES TO COMMENTS ON RESTORATION DETERMINATION PLAN ISSUED JANUARY 1995 CLARK FORK RIVER BASIN NPL SITES

OCTOBER 1995



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STATE OF MONTANA'S RESPONSES TO COMMENTS ON RESTORATION DETERMINATION PLAN (RDP) DATED JANUARY 1995

On January 13, 1995, the State of Montana released for public comment a "Restoration Determination Plan" (RDP). In response to requests from various individuals and entities, the comment deadline was extended from February 21, 1995 to March 23, 1995. The RDP was undertaken in furtherance of the State's natural resource damage lawsuit. In the RDP alternatives were arrayed, analyzed, and costed. Employing a decision-making framework mandated by the Department of the Interior's natural resource damage assessment regulations, 43 C.F.R. § 11, the State of Montana selected alternatives, subject to reconsideration based on public comment, further information, and additional analysis.

Response to comments on the RDP received are contained herein. Comments are reproduced in an appendix to this volume.

A. GENERAL COMMENTS

COMMENT: One commenter stated that restoration actions should be favored over replacement actions in order to ensure that future generations are not exposed to groundwater and soil contamination.

RESPONSE: The State basically agrees with the commenter. In developing alternatives the State of Montana considered the full range of allowable trustee actions, including replacement and acquisition of equivalent resources. After evaluating potential alternatives, the State of Montana determined to focus on alternatives that actually restored injured resources and services so as to prevent resource depletion and make available to future generations of Montanans the injured resources and the services they provide. Accordingly the alternatives in the RDP primarily involved restoration of the injured resources. In the case of Butte Hill Groundwater Resources, replacement alternatives were considered because restoration or rehabilitation of the injured resources is technically impracticable and would be inordinately costly.

COMMENT: A commenter stated that hazardous materials should not be left in place to "heal naturally" without some effort to reduce contamination.

RESPONSE: CERCLA and the DOI regulations mandate the consideration of natural recovery as a method to restore injured resources and services. Accordingly, the State is entitled to select such an alternative where appropriate. As discussed in the preceding response, the State would have liked to have been able to select the most aggressive restoration action in all instances but given the constraints the State was under, it could not do so.

COMMENT: One commenter expressed opposition to halfway cleanup measures.

RESPONSE: None of the alternatives considered by the State are "halfway" since all will return resources and services to baseline. Most likely the commenter is seeking more rapid restoration. On this point, the State considered a range of alternatives for each geographic and resource area including intensive alternatives that would restore resources and services to baseline conditions relatively quickly. Alternatives were selected based on a consideration of all relevant factors. While the State would also like to address all sources of contamination and return resources and services to baseline conditions in an expeditious manner, this was not possible or appropriate in all instances.

COMMENT: One commenter stated that the State's selected alternatives for Butte Hill, Opportunity Ponds, and Milltown are at odds with the statement in the RDP to the effect that the inability to fully redress the injury does not justify taking no action and that actions that improve conditions of the resource will accelerate restoration.

RESPONSE: The State perceives no inconsistency here. The statement from the RDP referenced by the commenter does not stand for the proposition that a replacement alternative or a natural recovery alternative can never be chosen. Each set of alternatives

was evaluated based on circumstances unique to the particular set of alternatives. In some instances, for example, natural recovery was chosen, in other instances this alternative was not chosen. In situations where natural recovery was deemed inappropriate, a reason might have been that notwithstanding a lengthy recovery period, it was advisable to seek to accelerate the eventual return to baseline conditions.

COMMENT: One commenter stated that if it was not technologically feasible to achieve true restoration, then funds should be put aside now to await the development of such technology in the future.

RESPONSE: CERCLA and the DOI regulations do not appear to contemplate such a result. Specifically, damages for restoration costs are recoverable based on the selection of alternatives to achieve restoration. 43 C.F.R. § 11.83(b). Compensable value damages, or public economic loss, must also be translated into restoration projects at the time of the preparation of a post-award "Restoration Plan." 43 C.F.R. § 11.93(a).

COMMENT: EPA stated that response actions that are anticipated in the RDP are not binding on EPA. Further, EPA noted that response actions are selected by it pursuant to CERCLA and the NCP and that the anticipated response actions in the RDP do not indicate anything one way or another as to what EPA's selection will be.

RESPONSE: As noted in the RDP, these are the State of Montana's estimates of likely response actions not EPA's.

COMMENT: EPA stated, without specifying, that the State of Montana's projections of remedy are incorrect.

RESPONSE: As indicated by EPA in subsequent discussions with the State, their concern, at the time the letter was written, was based on projections of response actions in the RDP for at least

one area and possibly two areas. For the area for which EPA disagreed with the State's projection, the State has modified its projection to reflect a soon to be issued ROD. For the area that may or may not have been the subject of EPA's concern, the State has also modified its projection to reflect a recently issued proposed plan.

COMMENT: EPA stated that it believes that restoration objectives can be substantially achieved without implementing actions that would conflict with response actions. However, where there is a conflict, EPA believes that the response actions selected by EPA should remain intact or go forward, and that restoration actions for the same area should not conflict with the response action implementation.

RESPONSE: CERCLA requires EPA to coordinate its remedial action assessments, investigations and plannings with State and Federal trustees. 42 U.S.C. § 9604(b)(2). This responsibility, in fact, is recognized in the "Proposed Plan, Streamside Tailings Operable Unit" which was published by the Montana Department of Health & Environmental Sciences and EPA in June, 1995. There it was recognized that: "The implementation of the selected remedy may be coordinated to the maximum extent possible with the possible implementation of the State's Restoration Plan in order to avoid duplication of effort and unnecessary costs and to maximize the benefits to the area." This coordination may involve, for example, adjustment of the schedule for implementation of the remedial action or allowing certain remedial actions and restoration actions to be combined to allow for more cost-effective implementation. The United States Department of Interior, in responding to comments on the final rule for natural resource damage assessments stated the following in this regard:

> "The Department encourages trustee officials to work closely with EPA . . . However, the Department recognizes that the purpose of a response action may differ from an action to restore . . . injured resources. Therefore the Department does not believe that consistency with response actions should govern the

selection of a restoration . . . alternative." 59 Fed.Reg. p. 14274 (March 25, 1994).

Thus the United States has recognized that a trustee is not required to select a restoration alternative that is consistent with the response actions taken at the site.

COMMENT: EPA indicated that it would continue to coordinate response decisions with the State of Montana in the hope that conflicts between response and restoration decisions can be avoided.

RESPONSE: The State of Montana looks forward to continued coordination with EPA of our respective programs and responsibilities in order to produce maximum benefits to public health and natural resources.

COMMENT: DOI commented that the State's natural resource damage lawsuit does not prevent DOI, acting under its independent authority, from seeking natural resource damages for injuries to resources under its trusteeship that are not adequately restored under the State's Plan.

RESPONSE: Nothing in CERCLA or the DOI regulations would preclude DOI from asserting its own natural resource damage claim under CERCLA so long as there is no double recovery of natural resource damages for the "same release and natural resource." 42 U.S.C. § 9607(f)(1).

COMMENT: DOI stated that the RDP should be revised in order to substantiate that policies of the Confederated Salish and Kootenai Tribes (CSKT) are not implicated by the alternatives. Specifically, DOI seeks documentation of consultation with the CSKT regarding this issue, including correspondence indicating CSKT concurrence with the views expressed by the RDP.

RESPONSE: The underlying issue raised by DOI will be taken up

in a response to a comment made by the CSKT. Regarding DOI's request for documentation of consultation and correspondence from the CSKT, readers of these comments and responses can see for themselves that the CSKT disagree that there are no tribal laws or policies implicated by the alternatives. The State of Montana did not feel it necessary to "consult" with the CSKT in making its determination. The analysis of alternatives is a task for the State of Montana, acting in its capacity as trustee. Nonetheless, if DOI is aware of tribal laws or policies that would be implicated by the alternatives, it should inform the State.

COMMENT: DOI commented that for those resources under the trusteeship of more than one entity, like threatened and endangered species and their supporting ecosystems, it believes that it is the collective responsibility of the trustee to provide for the restoration of natural resources and services. DOI notes that to the extent that the natural resource damage assessment and claims of one trustee do not accomplish this, other trustees may and should bring additional claims.

RESPONSE: To the extent there are natural resources that are the subject of the Report of Assessment and are also under the co-trusteeship of another entity, the State believes that its RDP and the to be developed Restoration Plan will appropriately provide for the restoration of the injured natural resources and services and will appropriately compensate the public for interim damage incurred while the resources and services are restored to baseline. As noted above, whether DOI or any other trustee could bring a separate claim for natural resource damages would depend on whether double recovery, as that term is used by CERCLA, was sought.

COMMENT: DOI commented that the RDP does not specify the location or extent of actions addressing natural resources under the trusteeship of DOI. DOI goes on to add that there are some areas in which the RDP will not accomplish full restoration of lost natural resources and services under DOI's trusteeship.

RESPONSE: As to any injured natural resources which are

within the co-trusteeship of the State and DOI, the State believes that it has specified in sufficient detail the location and extent of restoration actions to address the injuries. As DOI is aware, additional detail on the expenditure of any damage award for the purposes of restoration of resources and services will be provided in a post-award Restoration Plan. This plan must be released for public comment and the State of Montana anticipates, and looks forward to, hearing from DOI at that time and will endeavor to accommodate any concerns DOI may have.

It is impossible for the State of Montana to be fully responsive to DOI's assertion that full restoration of natural resources for which DOI is a trustee will not occur. DOI does not explain which resources it is referring to, nor what it means by "full restoration." If DOI is arguing that natural recovery does not accomplish restoration and that the alternative of natural recovery should never have been selected, the State of Montana points out that DOI's natural resource damage assessments require trustees to consider such an alternative and to select it where appropriate. Moreover, natural recovery will accomplish restoration, albeit, in some instances, in a very long time.

COMMENT: DOI, CSKT, and a public commenter argue that the RDP does not describe the baseline conditions of the resources and fails to link resource conditions to services. According to the commenters, they are unable to evaluate the extent to which restoration will be achieved under the various alternatives.

RESPONSE: The State of Montana disagrees that baseline conditions are not identified. Both the injury reports contained in the Report of Assessment and the RDP, which references those reports, describe baseline conditions. Nor does the State agree that it fails to link services to resources or that the extent of restoration is uncertain. In every alternative displayed in the RDP, timeframes are provided for "substantial recovery" and "restoration." In the end, through varying periods of natural recovery in addition to restoration actions, injured resources and services will be restored to baseline. AS is stated in Chapter 1 of the RDP, "restoration of services is accomplished by restoring

resources." Under every alternative displayed, resources and services will be restored to baseline.

COMMENT: DOI commented that restoration actions on lands under the administrative jurisdiction of DOI, such as Grant-Kohrs Ranch and Bureau of Land Management lands, must be planned in consultation and implemented with the approval of the appropriate land management bureau. DOI further stated that it would be pleased to cooperate with the State on these efforts.

RESPONSE: The State looks forward to working with DOI.

COMMENT: DOI encouraged the State to consider additional actions that would restore lost resources and services to baseline conditions in a shorter period of time than is projected to occur in the RDP (i.e., thousands of year to return to baseline conditions).

RESPONSE: The State of Montana shares the frustration of DOI. Nonetheless, the State believes that given the conditions in the Upper Clark Fork River Basin, it has considered a reasonable range of appropriate alternatives. Furthermore, the State believes that it has selected the most appropriate alternative for each area in accordance with the decisionmaking process that DOI itself devised. The State also notes that DOI did not provide any specific suggestions regarding restoration alternatives or methods to accelerate the time to baseline conditions.

COMMENT: DOI commented that the RDP did not (1) explicitly address injury to migratory birds or endangered species and (2) specifically direct restoration efforts at migratory birds and endangered species.

RESPONSE: The State's Terrestrial Injury Report does address injury to migratory birds and endangered species and quantifies the extent of injured habitat. Reestablishment of the lost habitat will restore the services formerly provided by that habitat to

biological resources and will, among other things, result in the restoration of migratory birds and endangered species.

COMMENT: DOI stated that before it can concur with the State's determination that migratory birds and endangered species will be restored, a formal agreement and detailed habitat restoration plans would be required.

RESPONSE: It is unclear to the State what the purpose of such an agreement would be or what it would accomplish. Nonetheless, the State would consider any proposal made by DOI and wants to work with DOI to restore resources and services in the Basin.

COMMENT: DOI expressed its concern that by focusing on those upland and riparian areas that are effectively denuded of vegetation, the State's damage assessment underestimates injury and thus the State's restoration costs may be too low. Specifically, DOI contends that the State's claim does not take into account the costs to restore riparian and upland resources that are injured but are not grossly injured.

RESPONSE: The State acknowledges that injury, as defined by the DOI regulations, might exist outside of the area delineated by the State as injured. The State made its decision to attempt to determine injury for those areas that were grossly disturbed in order to focus its resources and because of the strict nature of the DOI regulations, which would have made a finding of injury in areas not grossly disturbed difficult, or even impossible. Moreover, it should be noted that the injury determination for surface water identified source areas of contamination causing that injury. Restoration actions can and will address these source areas notwithstanding that the source areas themselves were not formally determined to be injured. Finally, DOI's comment is less of a comment on the RDP and more of a comment on injury issues. With regard to this subject, DOI, like all other entities, had an opportunity to comment on the State's assessment plan at the commencement of the assessment. In any event, the State of Montana also believes that its damage claim is conservative.

COMMENT: DOI stated that the RDP's restoration alternatives do not take into account interim damages, which are those damages that would accrue up until the time resources and services are returned to baseline. DOI adds that restoration may be deemed complete with the initial establishment of vegetation but that such a system would not provide full ecological services until the forest, grassland and riparian systems have matured. DOI notes that the provision of full ecological services will take a substantial length of time and states that this is most true for forest restoration.

RESPONSE: Addressing DOI's comments in order, interim damages are a component of the State's claim for damages. Since these damages are in the nature of economic losses they are computed, as required, in the State's claim for compensable value damages. Second, DOI makes a confusing distinction between the completeness of restoration and the return of the full measure of ecological services. But, in its various rulemakings, DOI has stated explicitly that when resource services are returned to baseline conditions restoration is deemed complete. 58 Fed. Reg. 39340 (1993). If it is DOI's point that restoration should not be deemed complete upon the initial reestablishment of vegetation, the State of Montana agrees. Finally, the State understands that restoration to baseline conditions will be a lengthy process. This is reflected in the RDP's estimates of recovery times.

COMMENT: CSKT stated that it has a trusteeship interest in the Clark Fork River Basin.

RESPONSE: The State of Montana is aware that CSKT claims a trusteeship interest in natural resources in the Upper Clark Fork River Basin. The nature and extent of the CSKT's trust interest under CERCLA is presently being litigated in Montana v. ARCO.

COMMENT: CSKT commented that the State's characterization of itself as "lead trustee for all of the natural resources for which it has asserted trusteeship...(which) includes all ground water, surface water, stream bank and bed sediments, air, macroinver-

tebrates, and fish and wildlife within the Upper Clark Fork River Basin" is at best inaccurate and certainly misleading. CSKT notes that the State has never been selected as "lead trustee" by all the trustees, in accord with 43 C.F.R. § 11.32, nor is the State the de facto lead trustee.

RESPONSE: The State is lead trustee for all of the natural resources for which it has asserted a trusteeship in its Report of Assessment both de facto and in accordance with the DOI regulations, 43 C.F.R. § 11.32. Section 11.32 does not require the selection of a lead trustee and provides that "if consensus cannot be reached as to the designation of the lead authorized official, the lead authorized official shall be designated in accordance with paragraphs (a)(1)(ii)(B), (C), or (D) of this section." The State is lead trustee under 43 C.F.R. § 11.32(a)(1)(ii)(D).

COMMENT: CSKT commented that the State's assertion that neither Federal nor Tribal laws or policies are "implicated" in the evaluation of factors for determining the State's restoration alternative at each site is mistaken. CSKT asserts that Federal and Tribal laws and policies are directly affected by many of the assumptions underlying the RDP and, at every step, by the choice of alternatives presented for consideration and the selection of preferred alternatives. In addition, CSKT asserts that the State's failure to consider Tribal rights, interests and policies and the Federal law that mandates their consideration is so fundamental as to require revision of the document.

RESPONSE: Although CSKT implies that there are a plethora of Federal and Tribal laws and policies directly affected by the RDP's selection of alternatives, other than the Hellgate Treaty, it points to none. Accordingly, the State sees no reason to revise its RDP in this regard.

COMMENT: CSKT commented that a "central Federal law affecting restoration determinations for the Upper Clark Fork is Article III of the Hellgate Treaty of 1855. . . which recognizes and guarantees the retention by the Tribes and its members of their aboriginal

right to take fish at usual and accustomed places, including the Clark Fork River Basin in Montana, in common with the citizens of the territory."

RESPONSE: The State recognizes that the Hellgate Treaty provides for the right of the CSKT to take fish at "usual and accustomed" places in common with the citizens of the State. Whether or not there are any such usual and accustomed places within the lands which are the subject of the State's Report of Assessment is a factual issue raised by CSKT's Motion to Intervene in Montana v. ARCO.

COMMENT: CSKT commented that in addition to the right to take fish, the right of access and occupational servitudes upon and along the banks of the Clark Fork and its tributaries and within the floodplain, and the ability to assure the protection of the quantity and quality of the riparian and aquatic habitat necessary to render such fishing and usufructuary rights meaningful, have been grievously damaged by the century-long, continuous release of hazardous material into the headwaters of the Clark Fork.

RESPONSE: As indicated above, the nature and extent of the CSKT's rights in and along the Upper Clark Fork River, if any, are the subject of dispute in Montana v. ARCO. To the extent CSKT has such interests, the State would agree that they have been damaged by the century long release of hazardous substances into the Clark Fork River.

COMMENT: CSKT commented that CERCLA's purpose in expressly including Indian tribes among eligible natural resource trustees (and, derivatively, the purpose of the Department of the Interior in its regulatory requirement that Tribal laws and policies be considered in framing restoration determinations) is precisely to assure the protection of such rights as those reserved by and secured to CSKT by the Hellgate Treaty.

RESPONSE: As indicated above, the nature and extent of the CSKT's rights in and along the Upper Clark Fork River are the

subject of dispute in Montana v. ARCO. The State believes that the purpose of including Indian tribes as possible trustees in CERCLA was to assure the protection of Tribal lands.

COMMENT: CSKT commented that the State has no authority under CERCLA or an other law or theory to act as a natural resources trustee of Tribal Treaty rights within the Clark Fork Basin, though it does have a specific obligation not to impair those rights.

RESPONSE: The State does not assert that it has a right to act as "a natural resource trustee of Tribal Treaty rights within the Clark Fork Basin." However, the State has the right to act as "lead trustee" under CERCLA as to natural resources, if any, which are within the co-trusteeship of the State and the CSKT. (See 43 C.F.R. § 11.32.)

COMMENT: CSKT commented that, in the RDP's discussion of coordination with other entities, CSKT is ignored or dismissed as an "entity involved" - in itself a fatal flaw.

RESPONSE: While not formally recognizing the status of CSKT as a co-trustee under CERCLA of the natural resources which are the subject of its damage claim in Montana v. ARCO, the State has attempted to coordinate its assessment efforts with CSKT as if it were a potential trustee in the same manner that it has coordinated its efforts with the United States Department of Interior. Prior to May of 1993, CSKT had led the State to believe that it was not interested in the assessment or the lawsuit. Subsequently the State has met with CSKT on a number of occasions in order to describe the State's assessment efforts and seek CSKT's input as to such efforts. The State has also attempted to negotiate with CSKT an agreement regarding its claimed interests.

COMMENT: CSKT commented that the State has twin duties (1) to develop and consider restoration alternatives in light of its co-trustees' laws and policies, and (2) to make a good-faith effort to coordinate its proposed actions with them.

RESPONSE: The State has developed and considered restoration alternatives in light of its co-trustees' laws and policies and has made a good-faith effort to coordinate its proposed actions with its co-trustees and even its potential co-trustees.

COMMENT: CSKT stated that the State has relegated the role of the co-trustees to rubber stamping restoration decision made by the State.

RESPONSE: As noted in a response to an earlier comment, the State has made many attempts to coordinate and reach agreements with co-trustees, including CSKT as a potential co-trustee. The State anticipates that coordination and consultation will also be advisable in the future. However, the State does not believe that before it implements restoration actions in the Upper Clark Fork Basin it must obtain the approval of the CSKT or, for that matter, DOI.

COMMENT: CSKT commented that, in general, the RDP fails to give more than superficial treatment to descriptions of resources or services injured, historically or recently, by the releases of heavy metals or other hazardous substances, especially for Silver Bow Creek, Butte Mine Flooding, Lower Area One, Milltown and the main stem of the Clark Fork River.

RESPONSE: The State disagrees and notes that the RDP incorporates by reference various reports contained in the Report of Assessment, including the Aquatic Injury Report, Terrestrial Injury Report, and five Groundwater Injury Reports.

COMMENT: CSKT commented that it is unclear whether the expected level of resource restoration will provide a comparable level of lost service restoration and what restoration end or goal the alternatives were developed to achieve.

RESPONSE: The goal of restoration alternatives is to restore injured resources and services to baseline conditions. As stated

in Chapter 1, "although it is the natural resource that trustees are restoring, restoration of that resource causes an increase in services [and] restoration of services is accomplished by restoring resources."

COMMENT: CSKT commented that the RDP's failure to develop alternatives to restore lost services is not justified by quoting DOI to the effect that "restoration of services is accomplished by restoring resources." CSKT adds that it claims lost services of a significantly different nature than does the State and the above quotation invites ARCO to invoke a double recovery defense to CSKT's claim.

RESPONSE: As noted in the RDP and elsewhere in this response to comments, alternatives were developed in order to restore services. Service restoration will be accomplished by restoring resources. The commenter may not like DOI's statement, and may even disagree with it, but the State of Montana believes it stands for a self-evident proposition and represents the present state of the law. Whether CSKT is a CERCLA trustee and able to assert a claim for natural resource damages for injured resources for which the State is claiming damages is the subject of litigation in Montana v. ARCO. However, to the extent that CSKT has incurred damages that are different than the damages claimed by the State, there can be no legitimate assertion by ARCO of a double recovery defense. The State is unclear as to how utilizing the DOI's quotation invites ARCO to invoke a double recovery defense.

COMMENT: CSKT commented that land acquisition returns resources and services to baseline conditions and that the RDP inappropriately rejected this option. CSKT added that the reason such an option is allowed is to address a situation like the Upper Clark Fork River Basin where it will take an extremely long time to restore resources and services to baseline conditions.

RESPONSE: While the acquisition of land is a permissible trustee action, and one that was considered by the State, such an action does not, without more, either improve the condition of the

injured resources or constitute a net gain to the citizens of Montana or society overall. In other words, acquisition of land, in and of itself, simply enables the acquired resources to provide the same services to the public and other resources they have always provided. Accordingly, the State does not believe that, viewed technically, the mere acquisition of land returns resources and services to baseline conditions.

Nonetheless, as noted, the State considered such alternatives and found them wanting given the circumstances of this situation. This was a matter entirely and appropriately within the State's discretion. It should also be noted that while the State deemed it unnecessary to display land acquisition alternatives in the RDP, the State will consider land acquisition actions when making determinations as to expenditures of compensable value damages. The court, in State of Ohio v. DOI, 880 F.2d 432 (D.C.Cir 1989), explicitly stated that acquisition of equivalent resources would be an appropriate trustee action since the acquired resource would stand in for the injured resources while they are recovering and thus compensate the public for its loss in value during the recovery period. When decisions regarding the expenditure of compensable value damages need to be made, the State of Montana would welcome specific suggestions from CSKT, or any member of the public, as to parcels of land to be acquired along with a justification of how, and to what extent, the acquisition compensates the public.

Finally, the State of Montana notes that while CSKT criticizes the State for rejecting land acquisition alternatives, CSKT offers no specific ideas of its own. CSKT neither explains how the acquisition of land would return resources and services to baseline nor identifies how much land or what land should be acquired. It should also be noted that the release of the RDP was not the first time CSKT, and all other commenters, had a formal opportunity to provide this kind of detail to the State. In March of 1994, the State, recognizing the importance of alternative development, released a Restoration Report for public comment. Thus, commenters had ample opportunity to develop their own alternatives for submission to the State. Having failed to do so, CSKT cannot now be heard to object to the State's failure to consider an unformulated alternative.

COMMENT: ARCO stated that the requirement for a Restoration and Compensation Determination Plan (RCDP) was not met. Specifically, ARCO stated that the RDP, along with the earlier released Assessment Plan, Part II, were not equivalent to the RCDP because the Assessment Plan, Part II was cursory, comments made by ARCO on the aforementioned document were not considered, and the DOI regulations have changed since the issuance of the Assessment Plan.

RESPONSE: The State believes that the RDP and the Assessment Plan, Part II, when taken together are equivalent to the RCDP. Under §11.81(a) of the DOI regulations, the RCDP is to identify cost estimating and valuation methodologies and perform an alternative analysis. The RDP arrays alternatives, identifies the costs of alternatives, and then selects alternatives based on an evaluation of relevant factors. Thus, the RDP identifies cost estimating methodologies and undertakes an alternative evaluation. The Assessment Plan, Part II, identified the valuation methodologies to be utilized, i.e., the use of a travel cost model to determine recreational fishing and non-fishing damages and the use of contingent valuation to determined total compensable values. The Assessment Plan also identified cost estimating methodologies, i.e., unit methodology (see §11.83(b)(2)(i)). In short, all of the elements of a RCDP have been performed.

The State does not believe that the Assessment Plan, Part II's treatment of cost estimating and valuation methodologies was insufficient. The discussion in the Assessment Plan, Part II clearly identified the valuation methodologies that would be undertaken and discussed them at length. Moreover, as noted above, the Assessment Plan, Part II also identified the use of unit rates as a cost estimating methodology. Of course, the RDP goes into much greater detail in this regard.

The commenter's assertion that the State failed to consider its comments on the Assessment Plan, Part II is incorrect. All comments received, including the commenter's, were considered. Comments on all parts of the Assessment Plan were responded to in a previously issued response to comments volume. In short, the State considered ARCO's comments; consideration, however, does not

necessarily mean that the State agreed with the comments.

Finally, the fact that the DOI regulations have been made final since the Assessment Plan, Part II was issued is not significant. The regulations had been proposed at the time of issuance of the Assessment Plan, Part II. Part II was based on the proposed regulations and references the regulations throughout. The regulations changed very little, if any, from their proposed form to their final form. Accordingly, the Assessment Plan, Part II, insofar as it relied on the proposed regulations to identify methodologies, is equally valid with respect to the final regulations.

COMMENT: ARCO stated that, unlike the process followed by the State with regard to the RDP, the RCDP must be made available for comment prior to its publication in the Report of Assessment.

RESPONSE: At the outset the State notes that the commenter, like the public generally, had an opportunity to comment on a Restoration Report issued in March 1994. In fact, the commenter did comment on this report and these comments were considered by the State in formulating the January 1995 RDP. With regard to the commenter's specific point, it is true that the RDP was not issued and made available for comment until January 1995 when the State released its Report of Assessment. However, as the commenter is aware, the State has released or is releasing additional material which confirms the findings of the Report of Assessment or, in some instances, modifies the findings of the Report of Assessment. Modifications of note include changes to the State's claim for compensable value damages and restoration costs. These documents will be placed in the administrative record and will comprise the State's claim against ARCO. Accordingly, in light of these modifications to the State's claim, neither ARCO, nor any other commenter, has been prejudiced in any manner by not being able to comment on the RDP prior to January 1995. In fact, the modifications the State has made to the Report of Assessment indicates that the State has been receptive to comments and is striving to accurately measure restoration costs and compensable value damages.

COMMENT: ARCO stated that a demand for payment should not have been made prior to the release of a RCDP and the receipt of comments on the RCDP.

RESPONSE: As just noted, the State has adjusted its claim against ARCO. Thus, a new demand for payment from ARCO will be issued. Again, the commenter has suffered no prejudice as a result of the timing of the RDP.

COMMENT: ARCO stated that the RDP impermissibly seeks to restore purely private lands, such as riparian lands along Silver Bow Creek and the Clark Fork River and upland areas around Anaconda.

RESPONSE: The State believes that the scope of its trusteeship is not as narrow as the commenter asserts. The State of Montana is seeking damages to natural resources for which the State is a trustee. Such natural resources include surface water, groundwater, soil, vegetation, wildlife, and wildlife habitat. The State disagrees that it is seeking to recover natural resource damages for, and the restoration of, purely private resources. This issue has been raised by the commenter previously; the State has previously responded to ARCO's view on this issue.

COMMENT: ARCO asserts that the State has overestimated injury and has not calculated baseline properly. ARCO further states that its objections to the State's injury determination and baseline calculations have been set forth in a number of reports, which ARCO incorporates by reference.

RESPONSE: The commenter's reports, which it incorporates by reference, are directed at issues related to injury determination. Accordingly, they are not a proper subject for these comments and will not be responded to here. The State notes, however, that many of the issues raised by the commenter in these reports have been raised previously by the commenter in its comments on the various assessment plans and were responded to in the earlier released responses to comments volume. In addition, subsequently released

reports by the commenter comprise most, if not all, of the contents of the reports the commenter incorporates by reference. The State has issued a set of reports that addresses issues raised by this subsequent submission of the commenter.

COMMENT: ARCO stated that the RDP's usage of the term "substantial recovery"--as evidenced by its definition, which is, "the length of time for the productivity of the resource, or its ability to provide services, to be greatly enhanced relative to existing conditions--is inconsistent with the concept of baseline because the term does not take into account conditions of the resource not attributable to the release of the hazardous substance in question.

RESPONSE: When discussing alternatives the RDP set forth two separate indices of resource recoverability: baseline and substantial recovery. The commenter is correct that to determine the extent of liability of a party that has released hazardous substances causing injury to natural resources, baseline is the relevant measure. Nothing in the RDP is inconsistent with this principle. The State utilized the two indices of recoverability to facilitate drawing comparisons between alternatives in order to assist its decisionmaking process and the public generally. Substantial recovery is simply another way to discuss and identify the efficacy of a particular restoration action. Thus, the concept of substantial recovery is entirely separate from the concept of baseline, and its use does not effect a determination of when baseline will be reached. In all cases, baseline is determined by an analysis of when resources and services would be returned to the conditions they would have been in had the release of the hazardous substance not occurred.

COMMENT: ARCO stated that in formulating restoration alternatives the RDP did not take into account pre-existing trends affecting resource conditions. Specifically, ARCO stated that baseline for land along Silver Bow Creek is in an overgrazed condition, but the State seeks to restore to conditions that are beyond baseline. ARCO quoted from the RDP to the effect that the

injured area "would be replanted with native species of grasses, shrubs and trees to reflect a baseline habitat mix of shrub/forest and agricultural (hay/pasture) habitat types."

RESPONSE: In determining appropriate restoration actions and in determining the costs of these actions, the RDP was meticulous in not going beyond baseline. The statement from the RDP quoted by the commenter is a good example of this. Restoration actions on the injured area would not create a pristine landscape nor recreate the conditions prior to the release of hazardous substances. Instead, the State determined baseline by comparing Silver Bow Creek to other similar streams and determined the percent of Silver Bow Creek that would be agricultural, i.e., hay fields and pasture for cattle, and the percent that would be shrub/forest. Restoration actions reflected these percentages as the above quoted statement indicates. The commenter appears to be suggesting that the State should not restore to pastureland but should restore to overgrazed pastureland. How this can be achieved when there is no pasture to begin with, the commenter does not indicate. The State rejects the commenter's hyper-technical reading of what baseline requires.

COMMENT: ARCO stated that the RDP erred when it asserted that there is a preference for actions that restore resources. ARCO further stated that this mistaken view on the part of the State caused the State to categorically refuse to consider all acquisition alternatives, which in turn prevented a consideration of a full range of alternatives and rendered the State's decisionmaking deficient.

RESPONSE: The commenter is correct that the State believes that CERCLA establishes a preference for actions that restore resources. But, the commenter is incorrect in contending that this was what caused the State to decline to array acquisition alternatives in the RDP. The State is well aware, as noted in the RDP, that acquisition alternatives are an allowable form of trustee action. As noted in a response to an earlier comment, and contrary to the commenter's assertion, the State did consider acquisition alternatives. In fact, the commenter is aware of this based on

documents it received during discovery. These alternatives were rejected for a variety of reasons, but principally because the State determined that given the magnitude of injury and the importance of these resources, it was in the best interest of the State and its citizens to focus on resource restoration. This is a decision wholly and appropriately within the discretion of the State as trustee. It should be noted that there is no requirement that the RDP explicitly include acquisition alternatives. Moreover, establishing a range of reasonable alternatives for consideration is within the informed discretion of the decisionmaker. Since the State was well within the proper exercise of its authority to decline to explicitly array acquisition alternatives, the State's decisionmaking process was not flawed in any respect.

COMMENT: ARCO stated that the RDP fails to explain the relative weight that it gives to different factors in selecting an alternative.

RESPONSE: The State disagrees. The RDP explained the rationale for its decision. This discussion necessarily entailed a description of the relative weight that was afforded to the different factors.

COMMENT: ARCO stated that the RDP's application of the cost-effectiveness factor renders it meaningless. Specifically, ARCO stated that the RDP ignores the phrase "similar level of benefits" in the definition of cost-effective and, thus, is unable to make distinctions between alternatives on cost-effectiveness grounds. By way of example, ARCO points to the alternatives for Area One, which, according to ARCO, achieve the same level of benefit in that none achieve baseline and none have a reasonable probability of restoring groundwater to drinking water standards. Thus, ARCO commented, application of the cost-effectiveness factor as DOI intended would lead to the selection of the least expensive alternative at Area One, which would be natural recovery.

RESPONSE: As an initial matter, the State wishes to point out to the commenter that alternative selection by a trustee is in the

nature of a balancing process and that no one factor predominates. Obviously, if everything about two alternatives was exactly the same but the cost, a rational person would choose the least expensive of the two. But, the world is not that simple. Since no two alternatives are exactly alike, one issue will be how different are they and whether their differences are significant enough to outweigh a cost differential as between them. In other words, a decisionmaker has to ask what additional benefits will be derived from the selection of a more expensive alternative and are these additional benefits worth the additional cost. The point here is that the process cannot be reduced to a formulaic exercise as the commenter appears to believe.

Next, the example the commenter provides does not support the commenter's point. The benefits derived from these alternatives are very different. While it is true that recovery to drinking water standards would not occur for 200 years under Alternatives 3A and 3B, under Alternative 3C this level of recovery would not occur for thousands of years. On the other hand, return to baseline conditions would take significantly longer under Alternative 3B than 3A and longer still under 3C. Moreover, the alternatives produce different levels of benefits to Silver Bow Creek. Under Alternatives 3A and 3B the level of protectiveness to the Creek is equivalent, but the length of time the treatment plant would have to operate for is much longer under Alternative 3B than under Alternative 3A. And, Alternative 3C provides no protection at all to Silver Bow Creek. The State of Montana believes that these are significant differences between the alternatives. Having said that, however, does not mean that cost-effectiveness is not considered or factored into the analysis. Rather, it means that there is no simple, easy distinction to be drawn between the alternatives on this basis alone and that the differences in benefits between the alternatives must be explored and weighed against other relevant factors.

COMMENT: ARCO stated that the RDP ignores the factors of "potential for additional injury" and "human health and safety." Specifically, ARCO commented that the RDP totally ignores off-site impacts such as considering the impacts from the creation of borrow

sources and the risks to public safety from the transportation of waste materials off-site.

RESPONSE: The State does not agree that the RDP failed to consider these issues. For example, at Montana Pole, the RDP noted that highway removal would require a short-time detour of traffic and this would present some level of risk to the public. Nevertheless, the RDP concluded that these risks were acceptable. In summary, the State considered these factors, but it did not, apparently, analyze them in the same manner the commenter would have.

COMMENT: ARCO stated that the RDP selects alternatives that are grossly disproportionate in cost to the value of the resource.

RESPONSE: DOI has indicated that the selection of alternatives is not to be based on a strict numerical comparison between restoration costs and lost value, but is instead based on the application of all relevant factors. 56 Fed. Reg. 19758 (1991). Utilizing this decisionmaking framework, the State selected what it believes are appropriate alternatives.

COMMENT: ARCO stated that the RDP selects alternatives that would undo response actions.

RESPONSE: No alternative proposed for consideration or selected would undo any response action. For example, despite the application of STARS at the Governor's Project along the Clark Fork River, the RDP does not propose removal of the STARS-treated floodplain. For response actions that have not yet occurred, it is assumed that coordination between restoration and response authorities would occur and that this would enable a more extensive restoration action to go forward. When alternatives were costed, coordination was assumed.

COMMENT: ARCO commented on the RDP's statement to the effect that a remedy that utilized STARS could not be selected.

Specifically, ARCO stated that this statement revealed a fundamental misunderstanding of the part of the State as to its proper role as a trustee. ARCO also stated that the State could not select remedies under CERCLA.

RESPONSE: The State understands the distinction between its role as a natural resource trustee and EPA's role as a response authority. Although the statement in the RDP was clear, it has been misinterpreted or mischaracterized by the commenter. The statement was made with reference to alternatives that would incorporate a STARS remedy. The RDP, however, determined that STARS would not be effective, and thus, rejected these alternatives in favor of an alternative that did not rely on STARS.

COMMENT: ARCO stated that response actions, such as the Anaconda Golf Course, would provide services and that these services were not taken into account.

RESPONSE: It is unclear to the State how the commenter would have the State take these supposed amenities into account. The commenter does not provide any explanation. In any event, the State disagrees that these amenities should somehow serve to offset damages from injuries to natural resources. A golf course does not substitute for 120 miles of injured river or 17 square miles of injured wildlife habitat.

COMMENT: ARCO stated in an earlier submittal that various line items in the RDP's cost tables were inappropriate and led to inflated costs.

RESPONSE: The items that the commenter identified as being inappropriate and leading to inflated costs have been modified in the final RDP. Accordingly, it would not serve any purpose to respond to the commenter's specific points on these items.

COMMENT: One commenter believed that the State should provide a greater level of detail regarding the expenditure of compensable

value damages. This same commenter thought that these damages should be spent to address conditions at sites that will remain injured after response and restoration actions.

RESPONSE: The discussion sought by the commenter is premature but will occur, as discussed in a response to a previous comment, upon the development of the post-award "Restoration Plan." This plan will be subject to public comment. While the specifics of this Plan cannot be predicted at this time, the law requires that all damages recovered by the State must be spent to restore, replace, rehabilitate, or acquire the equivalent of the injured resources.

B. BUTTE HILL GROUNDWATER RESOURCES

COMMENT: One commenter stated that it was unclear whether the State chose not to seek restoration costs for pumping and treating the groundwater because EPA and ARCO have determined it is "technologically impracticable" or because ARCO would be responsible to do that, eventually, under the EPA's ROD for the Butte Mine Flooding Operable Unit. Another commenter asked the State to reconsider its determination not to restore the injured groundwater noting that this would eliminate concerns that the replacement water is already in use and would be consistent with the view of Butte residents and local government.

RESPONSE: Pumping and treating the water will be a component of the ROD but not until the critical water level is reached. Restoring the injured groundwater was deemed to be simply too costly; the State's opinion on this point has not changed.

COMMENT: A commenter urged the State to review the Technical Impracticability study referenced in the RDP and have its scientific experts evaluate its conclusions.

RESPONSE: The State's experts have reviewed the TI section of

the ROD and have concluded the conclusions are generally valid.

COMMENT: A commenter wanted the State to assure that money is allocated to cover the cost of transporting the water to Butte and distributing it to users if the replacement water comes from outside the basin.

RESPONSE: The cost calculations for the chosen alternative account for the costs of transporting the water to Butte. The alternative also assumes that any replacement water will be distributed using existing water distribution systems.

COMMENT: A comment was made that the State should consider evaporative losses from the newly constructed reservoirs in calculations to determine the amount of water needed to replace Butte's lost water supplies.

RESPONSE: This is a valid point, and upon reconsideration of the alternative, evaporative losses were accounted for by the increasing amount of water to be supplied.

COMMENT: One comment urges the State to secure water rights for the 327,000 acre-feet of water that will supply the replacement reservoirs, as it is highly unlikely that the 327,000 acre-feet will come from surface or groundwater supplies within the basin due to its over-appropriation. In addition, several comments questioned where the water would come from to fill the reservoir(s), noting there may not be an adequate supply in the Butte area.

RESPONSE: It will be up to ARCO to secure water rights prior to the payment of the judgment in this case, or it will be up to the State to secure such rights after such payment. The water may come from inside or outside the basin. For example, the water could come from not only the Butte area but from areas such as Brown's Gulch and the Georgetown Lake area. The price assigned to the water in the damage calculation reflects the scarcity of water rights.

COMMENT: A commenter wondered where and how would the reservoirs be constructed.

RESPONSE: The specific locations for reservoirs would be decided at a later date. A reconnaissance investigation of possible dam sites, "Upper Clark Fork Drainage Basin Report," list 40 possible sites for dams or dam enlargements in the Butte/ Anaconda area. This report was prepared in 1990 by Aquoneering (Laurel, MT) for the Headwaters Resource, Conservation and Development Inc. All reservoirs would be constructed using standard engineering practices.

COMMENT: Several comments suggested that Berkeley Pit water be pumped and treated instead of building a new reservoir; the water could then be used as replacement for the Butte Hill contaminated aquifer.

RESPONSE: As previously indicated, the expense of such treatment would be prohibitive.

COMMENT: A commenter questioned if reservoirs would limit instream flow in Silver Bow Creek and the Clark Fork River and if the new reservoirs would prevent industrial, agricultural, residential, and recreational use of the watersheds above the reservoirs. This commenter wondered whether since uses of the watershed would be necessarily restricted, such use restrictions would conflict with the purpose of restoration.

RESPONSE: While new or expanded reservoirs would necessarily restrict the use of areas over which they are sited, it is anticipated that such reservoirs would provide significant net benefits to industrial, agricultural, residential and recreation uses and natural resources in the Butte area. Such reservoirs would be located so not to limit instream flow in Silver Bow Creek or the Clark Fork River. (In fact a side benefit of reservoirs would be to allow an increase in flows.) Moreover, extensive studies to assure that these goals are met would be implemented,

with public input, before any construction occurred. The State perceives no conflict with reservoir construction and the purpose of restoration.

COMMENT: A commenter asked whether the construction of new reservoirs was consistent with Butte/Silver Bow's overall zoning master plan. The commenter added that new watersheds may prohibit residential development in areas where such development was planned for.

RESPONSE: The siting of any new reservoirs or expansion of existing reservoirs in Butte/Silver Bow County would be coordinated in cooperation with the county. It is not anticipated that areas which are slated for residential development would be used for reservoirs.

COMMENT: One commenter stated that domestic use is not the only water use injured and that the alternative does not consider water needs for "industrial" growth. The commenter added that the alternative would not provide enough water to allow for Butte's economic growth and inquired if more water could be delivered to Butte under the alternative.

RESPONSE: The amount of water that would be brought in under Alternative 2A, i.e., approximately 11 mgd, is based on the amount of injured groundwater. There is no legal justification for requiring the provision of more water. Furthermore the average water use of Butte's municipal system is 10.8 mgd; thus the addition of 11 mgd is substantial and would facilitate growth in Butte.

COMMENT: A commenter questioned whether a new industry coming to Butte would have the same degree of confidence in a water supply from an NRDP reservoir as from a known continuing source.

RESPONSE: The State sees no reason to question the reliability of reservoirs constructed pursuant to this Restoration

Plan as a continuing water source. These reservoirs could be utilized to store not only the 11 mgd to be brought into Butte as part of the Restoration Plan, but could also be used to store excess rain and snow melt runoff. After the year 2025, the reservoirs could be used to store the waters from the Berkeley Pit which have been cleaned through treatment.

COMMENT: A commenter asked whether the selected alternative precluded the right of the community to increase its water resources with a reservoir at some point in the future assuming the availability of water.

RESPONSE: The State sees no reason why a replacement reservoir would preclude the community from developing additional water sources in the future.

COMMENT: A commenter raised the possibility of an alternative that provided seed money for the development of technologies that would have as their aim or assist in the restoration of Butte Hill groundwater.

RESPONSE: It is doubtful that such an alternative would fulfill the State's objective of restoring injured groundwater or meet the legal requirements of CERCLA. Moreover, the State does not believe that it ever will be possible to restore the injured groundwater without expending an unreasonable amount of money.

C. AREA ONE SURFACE WATER AND GROUNDWATER

COMMENT: A commenter supported the State's selected alternative, and agreed that the cost of the remedy is justified because of the severity of injury to surface and groundwater, and the likelihood that these injuries will continue for thousands of years if not remediated. Further, the commenter believed the State's preferred restoration alternative provides the best opportunity to restore the contaminated alluvial aquifer and to

improve surface water quality in Silver Bow Creek and the Clark Fork River.

RESPONSE: The State agrees that the preferred restoration alternative provides the best opportunity to restore the contaminated alluvial aquifer and to improve surface water quality in Silver Bow Creek and in the Clark Fork River.

COMMENT: DOI commented that the State's recommended restoration in conjunction with EPA's removal actions may result in restoration of migratory birds and endangered species, but detailed restoration activities are not discussed in the Restoration Plan.

RESPONSE: The State did not intend to address migratory birds and endangered species in its restoration alternatives at Area One. The State's intent was to restore injured groundwater resources and address sources of contamination to injured aquatic resources downstream (i.e. downstream of the Colorado Tailings). Since the State did not analyze the impacts to migratory birds and endangered species at Area One, it is unclear how restoration actions, in conjunction with EPA removal actions, will affect these creatures.

COMMENT: DOI commented that even though little residual injury is expected, the interim injury occurring during the period between the initial establishment of riparian habitat and the habitat's return to full services has not been evaluated.

RESPONSE: As stated in the previous response, the State's focus at Area One is injured groundwater resources and surface water contamination. The State did not determine and quantify injury to aquatic resources or terrestrial resources along Silver Bow Creek upstream of the lower boundary of Area One. Consequently, the State did not determine residual or interim injury with respect to riparian wildlife habitat in this reach of Silver Bow Creek.

D. SILVER BOW CREEK AQUATIC AND RIPARIAN RESOURCES

COMMENT: Several commenters supported the State's selection of Alternative 3A because the alternative called for the removal of all hazardous substances from the floodplain.

RESPONSE: The comment is noted.

COMMENT: A commenter urged the State and ARCO to coordinate restoration activities at the site so that Superfund and NRDP remedial activities do not undo one another. The commenter encouraged the State to consider seeking Superfund cleanup costs and NRDP restoration costs for these sites at the same time, noting that this will facilitate coordination of on-the-ground activities and may save ARCO money.

RESPONSE: The State intends to coordinate with other agencies and response actions at all sites within the Clark Fork Basin. Through coordination, the State will maximize benefits to the resource and avoid having to undo any implemented response actions. Under CERCLA, response actions and restoration actions are distinct. The State's natural resource damage lawsuit is being undertaken pursuant to specific authority in CERCLA that gives the State the right to recover monetary damages for injuries to natural resources. Accordingly, at this time the State does not contemplate a situation where clean-up costs or actions under response and restoration costs or actions would be resolved in one package.

COMMENT: A commenter questioned how removal of contaminated sediments from Silver Bow Creek would be accomplished and how much it would cost.

RESPONSE: Contaminated sediments could be removed by dredging, excavating, or scraping using a variety of heavy equipment. Removal would occur in the dry, after the Creek is relocated to a bypass channel. The cost for sediment removal is detailed in the cost tables and accompanying notes in Appendix A.

COMMENT: A commenter stated that restoration actions in the Silver Bow Creek floodplain should be widened to, at a minimum, the 150-year floodplain because, according to the commenter, the Ponds are only designed to manage a 100-year flood and contaminants from a wider flood would spill into the Clark Fork River.

RESPONSE: Along Silver Bow Creek floodplain contamination extends beyond the 100-year floodplain into what is often referred to as the historic floodplain. The State's selected alternative targets all historic floodplain contamination. The State does not follow the connection the commenter is making between Warm Springs Ponds and the Clark Fork River and restoration actions along Silver Bow Creek.

COMMENT: DOI commented that the State's recommended alternative may restore injured resources under the trusteeship of the Department. DOI further notes that additional information is required before that determination can be made.

RESPONSE: The State agrees that the recommended alternative may restore injured resources under the trusteeship of DOI to the extent that such natural resource injuries exist, although none have been determined and quantified at this time. The State also agrees that more information is required for that determination. DOI offers little guidance in this regard since it fails to identify what natural resources it is referring to and how these resources have been injured.

COMMENT: DOI commented that while residual injury is not expected to be significant, interim injury may be significant since the return to full wetland services will take years.

RESPONSE: It is not clear whether the comment is addressing injured resources for which the State is trustee or injured resources for which DOI claims trusteeship. The State cannot meaningfully respond to the comment to the extent it refers to wetland resources and services, since no evaluation of wetland resources and services, per se, was conducted by the State. The

State, with respect to its trusteeship resources, does not agree that residual injury is not expected to be significant. In fact, the State identified substantial residual injury to aquatic and riparian wildlife habitat resources following response actions. The State believes that there will be a substantial period of interim injury before restoration actions, together with natural recovery, restore injured resources.

COMMENT: ARCO stated that planned response actions will improve water quality in Silver Bow Creek and restore services. To this ARCO adds that following response actions, Silver Bow Creek will not have dissolved concentrations of metals exceeding ambient water quality criteria (AWQC).

RESPONSE: The State does not disagree with the statement that response actions will improve the water quality of Silver Bow Creek. But this improvement will not constitute restoration of resources and services. Residual contamination will, for example, prevent the return to baseline levels of trout, which, in turn, will result in a continuing loss of services those trout provide to human beings and other resources. In addition, the comment's reference to dissolved concentrations of metals as the appropriate measure of injury is incorrect both legally and scientifically. Legally, the basis for surface water injury is a total recoverable method of analysis per the State's water quality standards. Scientifically, dissolved concentrations of metals in surface water do not consider, contrary to recommendations of the U.S. Environmental Protection Agency (EPA), adverse effects of contaminated food organisms (i.e. benthic macroinvertebrates) on trout.

COMMENT: ARCO commented that the RDP's conclusion that during peak flow events metals in bed and bank sediments will be remobilized and will result in adverse effects on water quality and biota in Silver Bow Creek is inconsistent with the planned response actions for Silver Bow Creek and is not supported by recent data collected in the Upper Clark Fork River. ARCO further stated that erosion of bank sediments will be controlled by, among other

things, excavation and relocation of tailings in the vicinity of the creek and stabilization of stream banks using fabric and vegetation. ARCO then added that recent data on water quality in the Upper Clark Fork River demonstrated 1) that elevations of metals concentrations during thunderstorms are below water quality criteria and toxicity thresholds for trout, and 2) that even the present extent of tailings remediation has been successful in controlling releases of metals during pulse events. Finally, ARCO stated that the absence of fish kills in the Upper Clark Fork River following remedial activities below Warm Spring Ponds and in the Mill-Willow Bypass is additional evidence that response actions planned for Silver Bow Creek will be successful.

RESPONSE: Based on the RDP's January 1995 projection of response actions, in which streambanks would not have been removed, the State's conclusion regarding bank sediment remobilization was accurate. Since release of the preliminary RDP, the State's remedy projection has changed. Under the new estimate, streambanks would be partially reconstructed. Consequently, metals contamination due to remobilization of bank sediments during peak flows would not be expected. However, given the extent of contamination remaining following the limited sediment removal described in the Proposed Plan, the State's conclusion concerning remobilization of bed sediments during peak flow events is accurate. While ARCO's data on thunderstorm pulse events are interesting, they nevertheless show increased concentrations of metals in surface water after storm events, indicating that releases of metals during pulse events have not been controlled. Reference to the absence of fishkills following remedial activities is entirely inaccurate. A fishkill occurred in the summer of 1991 in the area of Racetrack Creek, following remedial activities below Warm Springs Ponds.

COMMENT: ARCO stated that laboratory experiments and field data demonstrate that sediment-bound metals in Silver Bow Creek will not be a significant, long-term source of dissolved metals, and that amended tailings effectively mitigate potentially adverse effects associated with thunderstorm pulse events.

RESPONSE: Whether or not sediment-bound metals may be a

significant, long-term source of dissolved metals to the water column, they are a significant pathway of contamination to the food base of trout--benthic macroinvertebrates. As to the second part of the comment, the meaning of "effectively mitigate potentially adverse effects" is unclear. However, ARCO's own thunderstorm pulse event studies at the Clark Fork River document adverse effects related to storm events. These effects include increases in metals concentrations in surface water and, by extrapolation, deposition of sediment-bound metals upon the substrate of the River. Such deposition would further exacerbate contamination via the food-chain pathway.

COMMENT: ARCO commented that natural processes, along with response actions, will result in continuing improvement in water quality in Silver Bow Creek and that extensive bed sediment excavation is not warranted.

RESPONSE: The State does not disagree with the statement that natural processes will contribute to improvements in the condition of injured resources, including water quality. Nonetheless, bed sediment excavation beyond the limited removal sought by ARCO is necessary to restore injured resources in any reasonable timeframe. Spot removal is wholly inadequate to address contamination of the Silver Bow Creek streambed and will not improve the quality of streambed sediments to a condition even remotely similar to the Clark Fork River. It should be noted that Clark Fork River sediments, even with contaminant levels much lower than Silver Bow Creek, are a pathway to trout via benthic macroinvertebrates. Thus, spot removal of Silver Bow Creek sediments will result in long-term residual injury to aquatic resources of Silver Bow Creek.

COMMENT: ARCO commented that the RDP's assessment of metals loadings to Silver Bow Creek following response actions at Lower Area One (LAO) is incorrect because it does not interpret criteria exceedance on the basis of dissolved metals concentrations and fails to take into account response actions that protect Silver Bow Creek water quality through capture and treatment of surface and subsurface flows in the Metro Storm Drain and other tributary

drainages.

RESPONSE: It appears that the comment has misinterpreted the RDP. The RDP clearly states that the reduction in metals loadings to Silver Bow Creek results from the response action, specifically the tailings removal at LAO. Interpretation of criteria exceedances on the basis of dissolved metals concentrations, as proposed by ARCO, is inappropriate based on the State's water quality standards that utilize total recoverable concentrations. Lastly, the State does take into account all response actions, including actions that capture and treat surface and subsurface flows in the Metro Storm Drain and other tributary drainages.

COMMENT: ARCO commented that the hardness of Silver Bow Creek will likely be greater than 150 mg/l because of lime additions at the LAO water treatment plant and this will further increase the applicable AWQC for cadmium, copper, lead, and zinc.

RESPONSE: No data, literature references, or supporting documentation accompanied this comment so the State is at a loss to respond to the assumption embedded in the comment and the conclusion that flows from that assumption.

STARS

COMMENT: ARCO comments that the State did not provide any scientific or technical explanation for the conclusion that remediation of riparian areas using STARS would result in residual injury to aquatic resources or that areas treated with STARS may revert to a devegetated condition.

RESPONSE: The RDP explained that natural erosion processes occurring on a STARS treated floodplain would result in metals being transported to and contaminating surface water. In addition, the RDP explained that due to the high acid generation potential of the floodplain, a STARS treatment could not be assured of working over the long-term. ARCO has provided no evidence that would cause the State to change its mind in this regard. The State has

developed a technical paper on STARS that discusses its deficiencies in depth.

COMMENT: ARCO states that the Governor's Project on the Upper Clark Fork River and demonstration projects I, II, and III are evidence that STARS effectively supports vegetation growth, minimizes runoff, and decreases metal mobility.

RESPONSE: Without reference to published literature or other information, it is difficult to determine the basis for this comment and to provide a response. Reports the State is aware of that relate to the Governor's Project and Demonstration Projects I, II, and III do not discuss data related to vegetation growth, runoff and metal mobility. While several of ARCO's "expert" reports comment upon metals mobility, no quantitative analysis of vegetation growth and runoff was provided. In any event, the State does not believe, as discussed more fully in its technical report, that STARS allows for vegetative growth over the long-term, minimizes runoff, and decreases metals mobility.

COMMENT: ARCO states that studies of STARS-remediated areas have demonstrated successful revegetation by a variety of species and that metals toxicity is effectively ameliorated.

RESPONSE: The statement "any metals toxicity is effectively ameliorated by the STARS treatment" is misleading. The comment is made with respect to conditions as they presently exist, based on short-term observation and is not in reference to all relevant metals. The "variety of species" is in actuality a very limited number of acid and pH-tolerant species.

COMMENT: ARCO comments that the State fails to provide data or models justifying its concern that STARS may not be successful in maintaining a permanent vegetative cover. ARCO adds that the State does not provide an estimate of the probability of a STARS failure or an estimate of the time at which the failure may occur. Finally, ARCO notes that the State's concern over the long-term

effectiveness of STARS is not supported by the results of the pilot and demonstration projects, which indicate that STARS enables vegetation growth and decreases metal mobility.

RESPONSE: Responding to the commenter's remarks in order. 1) The State does not believe that models are necessary to demonstrate the limitations of STARS. 2) The State does not believe it necessary to provide a date certain upon which STARS will fail. As the commenter knows the world does not lend itself to such tidy predictions. Nor does the State understand the purpose for such an estimate. For restoration purposes it matters little whether STARS fails in 20 years, 50 years, or 100 years. 3) Pilot and demonstration projects are just what they are: pilot and demonstration. These are inadequate for making conclusions regarding the long-term effectiveness of STARS. The State would note, however, the reacidification problems encountered at demonstration project No. 1.

COMMENT: ARCO stated that alternatives that call for tailings removal are based on highly speculative criticisms of STARS and poorly substantiated characterizations of injury mechanisms and the potential for natural recovery.

RESPONSE: Tailings removal alternatives and the discussion of these alternatives in the RDP are based on considered opinions of the State's experts. These opinions are based on experience and familiarity with conditions in the Basin; an understanding of the processes at work in the Basin; extrapolation from sites outside the Basin; and a comprehensive analysis of injury mechanisms.

E. MONTANA POLE SITE

COMMENT: A commenter supported the recommended alternative and its determination to remove contamination beneath the highway overpass.

RESPONSE: Comment noted.

COMMENT: A commenter believed that Alternative 5A should have been selected to hasten restoration to baseline conditions.

RESPONSE: The State selected Alternative 5B because it represented the most appropriate alternative given all the factors the State was required to consider. While recovery rates are important factors in selecting alternatives, they do not, in and of themselves, override all other factors.

COMMENT: A commenter asked where the sludge from the treatment plant would be incinerated.

RESPONSE: This has not been determined.

COMMENT: A commenter asked what the average makeup of the sludge would be.

RESPONSE: The sludges will be wood treating oil ("carrier oil"), with about 2% PCP (pentachlorophenol).

COMMENT: A commenter wanted to know whether the selected alternative would allow for the future use of a more appropriate BACT (Best Available Control Technology).

RESPONSE: The alternatives were developed and evaluated in the context of today's technologies. There is nothing that would prohibit the use of a more efficacious technology in the future.

COMMENT: At least two commenters asked whether the selected alternative allowed for future residential use.

RESPONSE: The selected alternative makes no determinations with regard to the type of allowable land use at the site. However, restoration of the groundwater resource would certainly not preclude residential use.

F. ROCKER GROUNDWATER AND SOILS RESOURCES

COMMENT: A number of commenters disagreed with the State's selection of Alternative 6B and stated that Alternative 6A should be chosen. Commenters offered a number of reasons for their choice of Alternative 6A. These were: (1) Pumping and treating, as proposed under Alternative 6A, would address groundwater contamination; (2) there is a relatively small amount of groundwater contamination at the site, thus, impliedly, this contamination can be addressed; (3) the Rocker area is part of the Butte urban area and could be subject to high growth in the future; and (4) contamination in the upper aquifer must not be allowed to migrate into the lower aquifer.

RESPONSE: Based on an altered estimate of response actions, the RDP has revised its alternatives. Four alternatives are considered and natural recovery/no-action is selected. An explanation of the State's decisionmaking process appears in Section 6.6 of the RDP.

COMMENT: A commenter asked whether the groundwater/soil interaction had been studied in enough detail to accurately model the fate of arsenic. The commenter expressed concern over the possibility that once soil has been remediated, the groundwater may recontaminate the backfill material as the water table rises in the springtime.

RESPONSE: It is not clear exactly what question the commenter is asking. Clearly more data would be helpful and clearly no one is certain as to the eventual fate of the arsenic plume. The possibility of recontamination of soils from a fluctuating water table is a legitimate concern, depending on the nature of the remediation. At Rocker, under remedy, it is anticipated that the water table would only come into contact with gravel and, thus, issues related to recontamination would not be as significant as they might be otherwise.

COMMENT: A commenter asked whether a 500 ppm arsenic removal

standard would allow for recreational, residential, or industrial use.

RESPONSE: A 500 ppm arsenic standard allows for industrial use only.

COMMENT: A commenter questioned what models were used to determine which areas were above 500ppm arsenic.

RESPONSE: No models were used, rather random sampling was performed.

COMMENT: A commenter wanted to know who would be responsible if, in the future, a stricter removal standard for arsenic was formulated.

RESPONSE: This is an issue more appropriately raised in the context of the remedy selection process. The State cannot imagine a situation, however, where either it or EPA would allow conditions to persist that constituted a risk to public health, as, for example, if the standard for arsenic was made more stringent.

COMMENT: A commenter inquired how many soil samples were taken.

RESPONSE: Approximately 200 soil samples were taken at the site for both organics and inorganics.

COMMENT: A commenter asked how many years would it take until restrictions on groundwater use could be eliminated. This same commenter questioned if preventing groundwater use for such a length of time will adequately meet the goal of resource restoration.

RESPONSE: The State invites the commenter to turn to the revised Chapter 6 of the RDP for a response.

COMMENT: One commenter questioned whether long-term residential and business growth of the Rocker area would be relatively more constrained under Alternative 6B than under Alternative 6A due to the greater amount and extent of residual contamination under Alternative 6B.

RESPONSE: As noted in a response to an earlier comment, alternatives at Rocker have been revised. It seems self-evident, however, that the more residual contamination the less available a site will be for public use.

G. SMELTER HILL AREA UPLAND RESOURCES

COMMENT: A commenter questioned whether the injured uplands should be recontoured to create a more natural appearance.

RESPONSE: Restoration actions in the injured area will not focus on the appearance of the area but rather on resource and service restoration. In addition, the State believes that the unnatural appearance of the area is due almost entirely to the absence of vegetation.

COMMENT: A commenter asked who would be responsible if, after restoration activities, a wildfire occurs that prevents vegetation from maturing.

RESPONSE: By the time the upland area recovered to the point a fire across it would be possible, significant vegetation would exist. Consequently, any fire would likely not destroy all vegetation and could help in providing organic matter to the soil. It cannot be known at this time who would be responsible for such a fire.

COMMENT: DOI stated that the interim injury will be significant because the upland areas, and especially forested

areas, will not provide full services until decades after restoration.

RESPONSE: The State agrees with this comment.

COMMENT: ARCO stated that existing evidence does not support a restoration approach that involves physical mixing or turning over surface soils on Mount Haggin to achieve revegetation success.

RESPONSE: Several varied sources of information support soil disturbance as an important part of the restoration approach.

- First, the RI/FS data generated by PTI attests to the vertical concentration gradient of contaminants. Soils in the upper 0-2 inch (0-5 cm) depth have the highest concentrations of contaminants; concentrations of contaminants decline with soil depth.

- Phytotoxicity data developed by the State demonstrated a concentration-dependent relationship.

- Tree planting at the Bunker Hill Superfund Site, Idaho was successful if roots were placed below the upper contamination layer.

Therefore the State affirms that soil disturbance will enhance restoration. In any event, the State was highly selective in prescribing soil disturbance on Mt. Haggin under its selected alternative. Almost 32% (1,377 acres) of the area of Mt. Haggin is above 40% slope; soil disturbance will take place at the locations of the tree and shrub seedlings and the grass tubes. Another 30% of the Mt. Haggin area (1,309 acres) is targeted mainly for tree and shrub establishment. Again, soil disturbance will occur only in the immediate vicinity of the plantings. Approximately 19% (818 acres) of Mt. Haggin is now a deciduous shrub area and only minimal restoration efforts are called for across this area. The remaining 19% (800 acres) of Mt. Haggin is targeted as a grassland establishment area. Soil disturbance will be required over portions of this area to ensure revegetative success; however other areas where grassland communities are already established will require much less effort. The costs for work on Mt. Haggin reflect these varying degrees of effort.

COMMENT: ARCO commented that natural recovery on Mount Haggin has been ongoing since the closure of the Washoe Smelter and there is no need to establish islands of vegetation to promote recovery.

RESPONSE: Natural recovery has resulted in localized islands in a few parts of the impact area. Indeed, these recolonized areas are incorporated in the State's restoration plan and will greatly improve the landscape habitat diversity as further restoration is achieved. Many areas of Mt. Haggin, however, have remained barren, and show no indication of likely change in the near future. Phytotoxic conditions remain on and near the surface and will require active management if restoration is to occur in a timely manner.

COMMENT: ARCO stated, without providing any explanation, that the State's description of upland areas consisting largely of noxious weeds is not supported by its own field observation.

RESPONSE: The State disagrees. Field data and observations clearly demonstrate that noxious weeds are the predominant vegetative species across the injured area. Furthermore, ARCO fails to substantiate its assertion, which makes it difficult for the State to respond. In fact, ARCO's data corroborates the State's description. ARCO's plant list includes a substantial number of noxious weed species and the cover values for various areas that are classified as "grassland/forb" are dominated by noxious weeds with a scattering of other taxa. Lastly, the State notes that the presence of noxious weeds is obvious to anyone who visits the area.

COMMENT: The State's conclusion that maintenance will be "especially" required on revegetated steep slopes because of substantial die off is not supported by work conducted on similar sites such as the Bunker Hill Superfund Site in Idaho and Midnite Mine in Washington.

RESPONSE: A study of tree, shrub, and grass survival on a steep-sloped area at the Bunker Hill site, undertaken by the ARCO

consultant who provided the above comment, demonstrates that maintenance on steep slops is necessary. Redente and McLendon, Hillside Revegetation Test Plots for Bunker Hill Superfund Site, Annual Report (1993). First, the study had no test plots in unamended soil, leading one to conclude that plant establishment was essentially zero unless some active remediation was undertaken. In fact, treatments included liming, phosphorus, wood chips, and a combination of the three amendments. Second, as the table below indicates, the study shows a substantial mortality of western white pine, varying with the particular treatment utilized (Table 1). In short, the data from the study demonstrate that repeat planting (i.e., active maintenance) would be required.

Table 1. Redente's Bunker Hill White Pine survival percentage. [planted May 1991; observations in October.]

treatment	1991	1992
limestone	79	63
phosphorus	84	80
wood chips	37	18
limestone + phosphorus + wood chips	41	16

The Midnight Mine in Eastern Washington is another example of revegetative failure on steep slopes. In 1982 the South Gully Dump area was covered with six inches of soil, hyroseeded and planted with Ponderosa Pine (Beyke 1991). All the trees that were planted have since died and grass is very spotty (personal communication with Dr. Ben Zemora, Eastern Washington University). Another effort to establish vegetation will begin in the near future and will entail regrading and growth media placement (personal communication with Kelly Courtright, BLM).

COMMENT: ARCO commented that the State's estimated recovery times associated with different restoration alternatives are not based on scientific investigation and that recovery times must be placed in the context of some defined endpoint (i.e., plant

community type) and the time it takes to reach that end point should be related to the time it takes those species to reach maturity.

RESPONSE: In fact, the State and its experts do estimate recovery times based on endpoints, namely the time it takes to achieve a mature climax ecosystem over the entirety of the injured area. It is unclear what the commenter means by scientific investigations. Estimates are based on literature, experience, and professional judgment.

COMMENT: ARCO stated that costs to plant shrubs and trees are twice as high as they should be because the State underestimated by 50% the number of seedlings that can be planted per person per day. ARCO adds that this underestimate is significant because this cost is a significant portion of the total cost.

RESPONSE: Planting costs are 16% of the tree/shrub costs per acre. The estimate of 150 trees planted per day is not an underestimate. Montana Department of State Lands personnel estimated that 150 trees planted per day per person was appropriate. Planting is difficult and time consuming due to the steep, exposed rocky slopes that often lack significant amounts of soil and the fact that seedlings must be sheltered from sun and wind in order to promote revegetative success.

COMMENT: ARCO stated that the State's projected restoration costs for site preparation that include land leveling and excavation of drainages are inflated. ARCO added that the upland areas represent their original topography and do not require leveling or the creation of new drainages.

RESPONSE: The State disagrees that the costs are high, and notes that ARCO provides no support for its statement. Leveling is required to allow for the operation of reclamation equipment and drainages may be necessary to prevent erosion and protect revegetated areas.

COMMENT: ARCO noted that the planting of annual grains to produce organic matter for composting is an expensive way to produce a mulch to apply to shrub and tree seedlings.

RESPONSE: The State's organic matter enhancement costs ($200 per acre) are not high. To put the cost in perspective, at a treatment study plot on Smelter Hill, approximately $8,000 per acre was expended to deliver and apply manure. Furthermore, it should be noted that the same consultant who provided the above comment stated, in the course of his work at the Bunker Hill site, that planting redtop hay was the "most cost-effective approach" to supply mulch. Redente and McLendon, Hillside Revegetation Test Plots for Bunker Hill Superfund Site, Annual Report (1993).

COMMENT: ARCO stated that soil protection measures such as liming, ripping, disking, and excelsior mulch are unnecessary for the recovery of native vegetation.

RESPONSE: Soil protection is necessary on much of the injured areas to ensure revegetation success. The need for such measures has been demonstrated by their use, as a matter of course, at other sites including a revegetation project on Smelter Hill.

H. ANACONDA AREA RESOURCES

OPPORTUNITY AND ANACONDA PONDS

COMMENT: One commenter disagrees with the selection of a natural recovery alternative at the Ponds, preferring instead Alternative 8A. This commenter stated that natural recovery would not reduce the migration of contamination nor accelerate recovery. According to the commenter, even if Alternative 8A would not restore resources to baseline it would reduce the transport of contaminants off site and ensure a greater level of protection to Warm Springs Creek and the Clark Fork River.

RESPONSE: The State found that in the final analysis, the

benefits to groundwater from reducing infiltration by capping the Ponds were too uncertain to justify selecting a capping alternative given its extremely high cost. Nor could a capping alternative be justified looking solely at the recovery of some measure of wildlife habitat across Opportunity Ponds.

COMMENT: A commenter inquired as to the risk of wind-blown contamination off the surface of the Ponds if they were not capped.

RESPONSE: There is a risk of air-transported contamination from the ponds. The CERCLA response action is anticipated to include placement of crushed limestone on the ponds for erosion control. However, due to the breakdown of limerock on the acidic ponds, limestone will need to be continually reapplied if wind erosion is to be controlled.

COMMENT: DOI commented that residual injury would encompass at least 3,400 acres of riparian habitat because the State recommends natural recovery for this area.

RESPONSE: Comment noted.

COMMENT: DOI commented that in addition to the restoration costs, past and interim lost services should be determined for this site and included in the damage determination.

RESPONSE: The State's CVM report addresses and accounts for groundwater and soil, vegetation, and wildlife injuries in this area.

WARM SPRINGS PONDS

COMMENT: A commenter questioned why, in light of the RDP's assertion that there will still be hazardous substance releases from Warm Springs Ponds after implementation of the response action, there are no plans to restore the Ponds.

RESPONSE: As an initial matter, the State did not evaluate injury to natural resources at Warm Springs Ponds with the exception of groundwater underlying the Ponds. Consideration was given to removing the sediments in the Ponds and the Ponds infrastructure. However, three factors militated against such an action. First, the extremely large volume of saturated sediments would have been technically difficult to excavate and transport. Second, a large amount of remedial work has been done in reconstructing the Mill-Willow Bypass, upgrading the treatment capacity and efficiency of the Ponds, and closing the inactive Pond 1 area. This work would have to be undone. Finally, the task of excavating and disposing of such a large volume of sediments could be prohibitively expensive.

COMMENT: One commenter asked whether not proposing any restoration alternatives for the Ponds constituted an endorsement of the CERCLA interim ROD.

RESPONSE: The lack of restoration alternatives for Warm Springs Ponds should not be viewed as an endorsement of the interim ROD. The State believes, however, that the interim remedy will likely be the final remedy for the Ponds and this was the State's projection of remedy and upon which it based its estimate of residual injury.

COMMENT: DOI stated that the State's damage claim may be conservative because the riparian habitat injury quantification does not include Warm Springs Ponds. DOI added that the remedy at the Ponds would not restore services to pre-release conditions and that past and interim lost use should be addressed.

RESPONSE: Injury determination issues were addressed in the context of the various assessment plans issued by the State of Montana. Notwithstanding this, the State responds by noting that injury determination did quantify injury to groundwater at Warm Springs Ponds. With regard to the groundwater injury, the State recognized that the EPA remedy would not return resources and services to baseline. The State, after considering various options

for addressing injured groundwater resources and injured surface water downstream, determined that it would not be a productive exercise to display these options as alternatives in the RDP because none of the options would be chosen. In addition, it is unclear from the comment what specific resources and services at the Ponds DOI believes will not be restored. Regarding past and interim lost use at the Ponds, the compensable value component of the State's total claim is picking up at least part of these values.

COMMENT: ARCO commented that the State, in its baseline determination and thus its restoration decisions, failed to take into account the increases in aquatic and terrestrial services attributable to the creation of Warm Springs Ponds. Specifically, ARCO stated that the Ponds have created fisheries and improved terrestrial and waterfowl habitat and have ameliorated the impacts of the Butte wastewater treatment plant, which, in turn, has allowed a fishery to prosper in the Upper Clark Fork River.

RESPONSE: The commenter has raised this issue previously, and the State has responded previously. The State only notes at this point that the State determined injury to groundwater at the Ponds and this injury is not mitigated nor services returned by the specific resources and services the commenter identifies. In any event, the mere physical existence of the Ponds, and whatever measure of services the Ponds may provide, do not and cannot substitute for injuries to resources and services within the Upper Clark Fork Basin. In addition, the State believes that the entire premise of the comment is incorrect. Before their construction, the area that is now the Ponds was a wetlands. Service levels associated with a healthy, functioning wetlands were undoubtedly greater than the services presently provided by the Ponds. As for the commenter's belief that the Pond's presence has allowed a fishery to develop, the State disagrees. Releases of metals from the Ponds have been an important source of metals to the Clark Fork River. These metals have caused fish populations to be one-sixth of baseline levels. The State also disagrees with the commenter's assertion that the Ponds have ameliorated the effects of the Butte wastewater treatment plant. There is no evidence that this is the

case.

OLD WORKS

COMMENT: DOI states that the State's damage claim is likely insufficient because response and restoration actions for the Old Works/East Anaconda Development Area will not restore the pre-release riparian/wetlands habitat of the Warm Springs Creek floodplain.

RESPONSE: The State felt it not prudent to restore injured groundwater at Old Works to baseline because of the ubiquitous nature of the contamination in the aquifer. The State acknowledged that the EPA remedy would not restore injured groundwater. DOI's comment does not make clear how riparian/wetlands habitat have been injured by the release of hazardous substances so the State is unable to respond to any perceived deficiencies in its injury determination. Lastly, the State notes that services to be provided should be comparable to baseline conditions not pre-release conditions.

I. CLARK FORK RIVER AQUATIC AND RIPARIAN RESOURCES

COMMENTS SPECIFIC TO THE CLARK FORK RIVER

COMMENT: At least two commenters supported the State's selected alternative.

RESPONSE: Comments noted.

COMMENT: One commenter recommended that the State develop criteria to determine which riverbanks will be excavated and reconstructed and which ones will be stabilized by revegetation.

RESPONSE: It is premature to go beyond the level of detail provided in the RDP. Specific criteria will be developed at a later time. As a general matter, however, reconstruction would be favored for the most contaminated and unstable banks.

COMMENT: A commenter urged the State to coordinate restoration activities with the CERCLA response action and with the Department of Fish, Wildlife and Parks (DFWP) to assure that downstream impacts to water quality and fish habitat are minimized.

RESPONSE: To the extent practicable, restoration actions will be coordinated with CERCLA response actions. Implementation of any restoration alternative will, of course, involve the Department of Fish, Wildlife and Parks. Restoration actions will be implemented so that impacts to water quality and fish habitat are minimized.

COMMENT: A commenter wanted the State to secure rights for the 50 cubic feet per second (cfs) of water needed for flow augmentation and contaminant dilution in the Clark Fork River.

RESPONSE: The State would obtain rights for 50 cfs of flow for the Clark Fork River as part of its restoration action. Obviously, the State cannot obtain these rights, nor conduct any other restoration work, until damages have been collected.

COMMENT: One commenter questioned where, under Alternative 9A, the water for low-flow augmentation would come from.

RESPONSE: Water for flow augmentation could come from the purchase or leasing of water and/or water rights in the Clark Fork Basin.

COMMENT: DOI commented that residual injury would consist of so-called "lesser impacted" areas that would not be restored.

RESPONSE: Residual injury would not include "lesser impacted" areas that would not be restored. Residual injury only relates to

areas of the floodplain for which injury was determined and quantified. DOI's comment reflects a concern for areas of the floodplain that are contaminated but were not determined to be injured. As noted earlier, some areas of the floodplain will be addressed because they serve as sources of contamination.

COMMENT: DOI commented that interim injury would occur until full services are restored.

RESPONSE: The State agrees that interim injury would continue in areas where restoration actions are implemented until the time that resources, and thus the services that resources provide, are restored.

COMMENT: DOI commented that it was unable to determine, from the discussion in Section 9 of the Plan, what (if any) specific CERCLA response or natural resource restoration actions are proposed for Grant-Kohrs Ranch National Historic Site and thus judge whether baseline conditions would be reestablished within Grant-Kohrs Ranch. DOI stated that if Grant-Kohrs Ranch lands are included in the Warm Springs-Deer Lodge portion of the Clark Fork River that has been designated for streambank removal, reconstruction, and stabilization, then that should be made explicit in the RDP.

RESPONSE: The State of Montana cannot comment on the precise location of CERCLA response actions since those actions have not been identified with any degree of precision. Also, in its restoration planning, the State is unable to state, for example, that X number of acres of floodplain within the boundary of Grant Kohrs Ranch would be subject to restoration actions. That, too, is beyond the level of detail yet obtained or required. However, the identification of floodplain acreage slated for restoration actions encompassed contamination residing on the Ranch. This contamination would likely be addressed as part of the implementation of Alternative 9A. As stated in the RDP, streambank work would occur from Warm Springs Ponds to Deer Lodge.

COMMENT: DOI commented it believed that natural resource injuries at Grant-Kohrs Ranch may extend well beyond the 4,500 acres identified by Alternative 9A as constituting a source to the Clark Fork River and added that the RDP does not address contaminated upland soils, impacts to vegetation, and water and special uses of Grant-Kohrs Ranch, etc.

RESPONSE: First, the State is confused by DOI's comment since the RDP did not specifically identify the location of the 4,500 acres. Accordingly, the State is not sure of the basis for DOI's comment. Second, natural resources injuries do not extend to the 4,500 acres referred to in the above comment. The State determined and quantified injury to 215 acres of floodplain along the Clark Fork River. The additional 4,285 acres contain elevated concentrations of hazardous substances that are a source of contamination to injured aquatic resources of the Clark Fork River. Third, the State did not seek to determine injury to natural resources and related services for which it is not a trustee and did not seek to determine injury for every natural resource and related services in the Upper Clark Fork Basin for which it is a trustee.

COMMENT: DOI commented that based on the information, or lack of information, in the RDP, restoration of lost natural resources and services at Grant-Kohrs Ranch will not occur.

RESPONSE: Again, the State is confused as to the basis for this comment. To the State's knowledge there has been no assessment of injuries to natural resources and services at Grant Kohrs Ranch. Because natural resources and services at Grant-Kohrs Ranch have not been determined to be injured, the State cannot comment on the extent to which these resources and services would be addressed by the RDP.

COMMENT: DOI commented that the general statement in the RDP to the effect that contamination levels decrease with distance from sources is an oversimplification. DOI states that Grant-Kohrs Ranch contains contaminant levels as high or higher as contaminant levels found upstream, and the statement in the RDP should not

preclude restoration actions at Grant-Kohrs Ranch.

RESPONSE: The statement in the RDP relating to contamination levels and distance downstream from source areas is accurate when the Clark Fork River floodplain is viewed in its entirety. The aerial extent of bare slickens areas decreases with distance downstream from Warm Springs Ponds. Bare slickens areas are common between the Ponds and Deer Lodge, are less frequent between Deer Lodge and Garrison, and are virtually absent downstream of Garrison. The State recognizes that on a site specific basis, such as at Grant-Kohrs Ranch, bare slickens areas may contain contaminant concentrations as high as slickens further upstream. The statement in the RDP was not intended to justify taking no action at a downstream location where such an action would be warranted.

COMMENT: DOI commented that Grant-Kohrs Ranch has restricted certain uses of the floodplain in order to prevent additional releases of contaminants and that the limitation on various uses will continue until contamination is addressed.

RESPONSE: Comment noted.

COMMENT: DOI commented that the construction of sedimentation basins during restoration actions to protect Grant-Kohrs Ranch is critical, noting that implementation of restoration actions will result in runoff to surface waters. DOI adds that water taken from the river for irrigation purposes at Grant-Kohrs Ranch would contain elevated concentrations of contaminants and could necessitate an alternate source of water during restoration work if sedimentation basins are not constructed.

RESPONSE: The State, in implementing restoration actions, will attempt to minimize releases of hazardous substances to surface water. As stated in the RDP, this will be accomplished by following standard engineering practices, such as the use of coffer dams, and by attempting to work during low flow periods. Sedimentation basins will be used if appropriate.

COMMENT: DOI commented that where sediment basins are constructed, groundwater should be monitored.

RESPONSE: Groundwater would be monitored if it was deemed necessary.

COMMENT: DOI commented that Section 9.6.6 does not adequately address human health concerns.

RESPONSE: Human health concerns were not addressed because there is simply no information one way or another on this subject.

COMMENT: DOI commented that although the RDP alludes to tailings excavation, backfilling, recontouring, and revegetation activities for the stream reach between Deer Lodge and Drummond, there is a lack of clarity as to what, if any, restoration activities would be undertaken below Deer Lodge. DOI further commented that the BLM has lands bordering the river between Deer Lodge and Drummond that may warrant such activities, and, in particular, would warrant bank stabilization.

RESPONSE: Restoration actions that would be undertaken below Deer Lodge, as noted in the comment, include tailings excavation, backfilling, recontouring, and revegetation. Bank work below Deer Lodge is not a component of Alternative 9A but could occur indirectly as a result of work on the floodplain. The State is aware of only one small parcel of BLM land on the Clark Fork River, in this area located several miles upstream of Drummond. Restoration actions that could occur on this land include removal of contaminated floodplain soils, depending on the level of contaminant concentrations.

COMMENT: DOI recommended that the BLM tracts should be limed wherever metals levels are high or the pH is less than 4.0.

RESPONSE: Such an action is not a component of any restoration action. Application of lime, as contemplated by STARS, will not ameliorate residual injury. The State declines to adopt

DOI's suggestion.

COMMENT: DOI commented that the specific techniques to be employed during streambank excavations to prevent excessive siltation and entrainment of hazardous substances are not identified. According to DOI, the RDP is unclear as to the extent of additional or residual injury that will result from these restoration actions.

RESPONSE: As discussed previously, a variety of measures will be used to minimize releases of hazardous substances to surface water. A discussion of this issue has been added to Section 9.6.4. In short, the State believes that any impacts to the Clark Fork River from restoration actions will be minor and short term.

COMMENT: ARCO commented that the State cannot address sources of contamination on the floodplain of the Clark Fork River because areas where sources of contamination reside were not determined to be injured and the areas were not demonstrated by objective criteria to contribute to injury to surface water and aquatic resources.

RESPONSE: The commenter is correct that areas on the floodplain of the Clark Fork River slated for restoration actions were not determined to be injured. Riparian resource injury was based on the DOI regulations. This injury determination identified areas where metals contamination resulted in injury to soil, vegetation, wildlife, and wildlife habitat. Due to the intensive level of effort required to determine injury, the State determined injury only at areas that were grossly injured. As ARCO knows from reading the remainder of these comments and responses, the State has been criticized for not seeking to determine injury at areas not exhibiting gross injury.

The State does not believe that it is precluded from addressing sources of contamination to the Clark Fork River. Floodplain contamination was identified as a pathway to the River in the State's injury determination report. In other words, the

State did demonstrate by objective criteria that floodplain contamination contributes to injury to surface water and aquatic resources. Apparently, the commenter would have the State prove that each acre--or some other unit--contributes to injury. Given that floodplain contamination has been demonstrated to contribute to injury, such a requirement is unnecessary; neither the statute or regulations impose any such burden on the State before it can take action to address natural resource injuries.

SURFACE WATER COMMENTS

COMMENT: ARCO states that the RDP contains no scientific data to support the estimates of recovery time.

RESPONSE: Estimates of recovery time were made by the State's experts, as informed by their education and experience. The State acknowledged that such estimates are, by nature, imprecise. ARCO has failed to provide the State with its own estimates of recovery time or, for that matter, any information on this subject.

COMMENT: ARCO asserts that the State's estimates of recovery time are based on unrealistic restoration scenarios and inaccurate conclusions concerning the effectiveness of response actions.

RESPONSE: The broad nature of ARCO's comment makes it difficult to respond. ARCO fails to point to even one restoration scenario as an example of "unrealism," let alone describe why a particular scenario is unrealistic. Nor does ARCO even attempt to demonstrate the supposed invalidity of the RDP's conclusions regarding residual injury. Regardless, the State believes that the RDP's conclusions regarding the effectiveness of response actions in controlling sources of metals are accurate. These conclusions are set forth in the State's estimates of residual injury. Generally, sources of metals are not adequately controlled by response actions, so that natural resource injuries remain following implementation of response actions. Furthermore, the State believes that the RDP's projections of recovery under the

various restoration alternatives are realistic, that the alternatives are appropriate to address residual injury, and that the estimates of recovery time are accurate.

COMMENT: ARCO stated that water quality conditions in the Upper Clark Fork River are a valid indicator of future water quality conditions in Silver Bow Creek and demonstrate that adverse effects on surface water quality resulting from metals will be eliminated.

RESPONSE: This comment is without merit. Although it is not entirely clear what the comment means by the "upper" river, water quality in the Clark Fork River between Warm Springs Ponds and Milltown Reservoir (that is, the area encompassed by the State's injury assessment) is characterized by concentrations of hazardous substances that exceed both ambient water quality criteria and thresholds that result in injury to trout. Current water quality conditions in the "upper" 120 mile reach of the Clark Fork River certainly do not demonstrate that adverse effects on surface water quality resulting from metals will be eliminated anytime soon.

COMMENT: ARCO commented that (quoting) "the State's projected total copper concentrations of 55 ug/l to 70 ug/l (which, as stated above, do not take into account the effectiveness of remedial activities at MSD) represent a maximum range of dissolved copper concentration of 22 ug/l to 42 ug/l. These dissolved concentrations are not predicted to exceed AWQC, because dissolved criteria are more consistent with recent EPA guidance on AWQC than the total recoverable criteria used by the State."

RESPONSE: The State does not understand the comment so is unable to provide a response.

J. MILLTOWN RESERVOIR

GROUNDWATER QUALITY/PLUME STABILITY

COMMENT: A commenter noted that arsenic contamination had increased in wells located within the plume area between 1983-84 and 1990-92, in two cases by as much as 15 times, despite the .050 mg/l isocon line of the arsenic plume not shifting much in the last few years.

RESPONSE: This phenomenon was noted in the State's Milltown groundwater injury assessment report. In the report, it was concluded that the presence of an apparent increase in arsenic concentrations may imply that geochemical mechanisms are not fully understood and that insufficient time has passed to fully evaluate the final extent and fate of metal migration in the alluvial aquifer.

COMMENT: A commenter stated that arsenic contamination above State standards occurs in six wells approximately 4,000 feet downstream from the dam, and that sampling done in 1986 and 1988 showed an increase in arsenic contamination in every well that was resampled.

RESPONSE: The State is unable to respond to this comment without additional information concerning well identification, well location, and associated water quality data. The groundwater database for the Milltown injury assessment report contained only 5 wells from which samples were collected in 1986 and 1988. Four of these five wells were located adjacent to or upgradient of Milltown Dam.

COMMENT: A commenter stated that the edge of the plume is not precisely located because water samples were not taken at comparable levels in edge wells.

RESPONSE: The difference in sampling levels in edge wells is not expected to substantially affect the determination of the plume

boundary. The identification of a plume boundary location is an averaging process that considers seasonal and annual variability in groundwater chemistry, as well as variability that occurs through the vertical extent of an aquifer. The plume boundary is expected to fluctuate somewhat due to variations in groundwater chemistry. Therefore, the boundary of the plume cannot be delineated with the level of precision sought by the commenter.

COMMENT: A commenter expressed his belief that all of the wells that were sampled were either near the surface or just above the basement rocks and that no sampling had been done in the middle of the plume.

RESPONSE: Groundwater samples used to evaluate groundwater injury and the extent of groundwater contamination were collected from a range of depths throughout the affected aquifers, not just from the surface or above the basement rocks.

COMMENT: A commenter stated that one well at the edge of the arsenic plume has shown a variance in its readings, and this indicated, according to the commenter, that the boundary of the plume is in a state of flux. The same commenter believed that increasing arsenic levels in Wells 104, 105 and 906, which the commenter explained are first in line along the flowlines, are indicative of plume expansion.

RESPONSE: As stated above, analyte concentrations in groundwater often exhibit seasonal and annual variability. It is not unusual to see a range of analyte concentrations in wells from which numerous samples have been collected. Consequently, a plume boundary would be expected to reflect this variability. Groundwater quality data contained in the Milltown groundwater injury assessment report do not show arsenic levels to be increasing for these three wells. Wells 104 and 105 show arsenic levels within a very narrow range over the period of monitoring. Although samples from Well 906 showed an increase of 4 to 9 ug/l, there were only two samples and they were collected over a period of less than one year. This is not enough information to conclude

that arsenic levels are increasing.

COMMENT: Several commenters questioned the assumption that the arsenic plume is stable. Commenters believe that there have been increases of arsenic levels in wells right next to the boundary of the contaminated plume and in monitoring wells within the existing plume.

RESPONSE: As noted in the response to the previous comment, three wells near the plume boundary are not showing increasing arsenic levels in recent years. However, as discussed above, some wells within the plume have shown an apparent increase in arsenic concentrations over the ten-year data collection period. Other wells in the northern hydraulic boundary area do not show increasing arsenic levels in recent years.

COMMENT: Several commenters questioned the quality of the data supporting the assumption that the arsenic plume is stable. One commenter noted that data used to model the plume have been collected over about eight years, during a period of extended drought. Another commenter questioned the frequency of sampling, the timing of sampling, and the number of depths sampled in each well.

RESPONSE: Ideally, a comprehensive network of monitoring wells, with a strategic sampling plan considering depths of sample collection and sampling interval, would have provided more data to evaluate long-term trends. The available data have been compiled from different sources and different studies over an approximately ten-year period of time. While the State acknowledges that the dataset is not perfect, it is a good dataset for evaluating groundwater injury at Milltown Reservoir. An important fact is that arsenic concentrations in wells located just outside the arsenic plume boundary have remained relatively constant (and near baseline concentrations) for about ten years, even though arsenic concentrations in wells just within the plume boundary have shown an apparent increase in the same period of time (and are several orders of magnitude greater than baseline concentrations).

COMMENT: One commenter stated that studies done by ARCO and EPA show that the arsenic plume extends downstream of the dam. According to the commenter this indicates that the arsenic plume has not been stable but has moved out of the reservoir sediments and into the alluvial aquifer. Consequently, the commenter concludes that the arsenic plume threatens the Missoula sole source aquifer.

RESPONSE: The State's injury assessment report does not show that the plume has migrated downstream of Milltown Dam, even though portions of the Milltown aquifer adjacent to the reservoir have been injured. Differences in determinations of the plume boundary are likely due to differences in modeling assumptions and approaches. As the comment notes, movement of the arsenic plume beyond the reservoir sediments behind Milltown Dam indicates that the plume has moved since sediments were deposited behind Milltown Dam. Due to the lack of historic groundwater data, it cannot be said when this movement took place. The available data indicate the plume has not moved within the period of existing groundwater data collection (approximately 10 years). Although the plume appears to be stable under existing conditions, the plume could expand or contract under different geochemical or hydrological circumstances.

COMMENT: One commenter questioned the assumption that the arsenic plume would not move closer to the present Milltown water system, considering the contaminated sediments have already travelled 120 miles from Butte and the Milltown water system is 850 feet from the edge of the arsenic plume. The commenter notes that recontamination of the Milltown water system would affect all of Milltown instead of the 35 households that were affected in 1981.

RESPONSE: Comparing the fluvial transport of contaminated sediments 120 miles from Butte to the migration of dissolved arsenic through an alluvial groundwater system is inappropriate. Geochemical and geohydrological processes that affect each process are different, and result in different transport rates for contaminants. As noted in the comment, recontamination of the Milltown water system would affect more households than were

affected in 1981.

COMMENT: One commenter stated that the arsenic plume can be calculated to have moved about six feet per year between 1908 and 1992. Thus, the commenter continues, in the next 84 years, it is possible that the plume front will expand another 500 feet by migrating along flowlines emanating from the southeast portion of the plume and move closer to Milltown's current water supply. The commenter believes that from 1983 to 1992 the arsenic plume would have moved only about 50 feet, a distance too small to measure with the existing monitoring well locations and well separations. In addition, the commenter adds that low-flow conditions during the last ten years would also mitigate against an appreciable expansion of the plume.

RESPONSE: The plume boundary is not a fixed boundary, but fluctuates in response to changes in groundwater chemistry. Concentrations of analytes in groundwater characteristically show seasonal and annual variation, which would be reflected in the location of a plume boundary tied to some fixed concentration. As contaminants migrate beyond a plume boundary, concentration increases may be observed in wells beyond the existing plume boundary, although the boundary itself hasn't, on average, migrated further downgradient. Wells beyond the edge of the plume boundary, as indicated in responses to earlier comments, have not shown increased arsenic concentrations over the ten-year monitoring period. Finally, the existing monitoring well locations and well separations should not limit the ability to detect plume migration.

COMMENT: One commenter expressed alarm that the Hellgate Aquifer Study reported that the contamination is moving downstream.

RESPONSE: Data from the Hellgate Aquifer Study did not find elevated levels of arsenic from previous sampling. A comparison of arsenic concentrations in wells measured in 1993 with earlier data tabulated in the Milltown injury assessment report does not show that arsenic concentrations have increased over time. In wells M-16, M-17 and HLA-2 concentrations in 1993 were within the range of

previously reported concentrations. In well 917, arsenic concentrations in 1993 were at the upper end of, or slightly exceeded, concentrations documented in the two previous years (which ranged from near baseline to nearly 150 ug/l). The State does not believe that the data presented in the Hellgate Aquifer Study supports the conclusion that contamination is moving downstream.

COMMENT: One commenter noted that data from the Hellgate Aquifer Study indicates that concentrations exceeding the state groundwater standard occur downstream of the site. The commenter stated that one sample taken from the Bandman Flats area had a concentration of 5.0 ug/l, wells downstream in Hellgate Canyon indicated concentrations in the range of 1 to 2.4 ug/l, and wells sampled in Pinegrove, as part of the downstream screening study, exceeded the state standard. The commenter stated that the data should be included in future reports that evaluate the extent of the arsenic plume.

RESPONSE: While these concentrations are greater than the state standard (before revision by the State legislature in 1995), they are less than or approximately the same as the concentration the State determined to be a baseline concentration (3 ug/l). Groundwater injury for arsenic is based on a threshold concentration of 50 ug/l. The State does not believe that the data referenced by the commenter sheds any light on the extent or fate of the Milltown arsenic plume.

COMMENT: One commenter stated that questions have been raised regarding the seismic studies and contouring that was done to map the surface of the impermeable basement rocks below the sediments.

RESPONSE: The State is unaware of any specific concerns related to the seismic studies and contouring. It is also not clear how this would relate to the restoration of groundwater at Milltown Reservoir.

COMMENT: One commenter noted that Milltown Dam was constructed on top of alluvium at its north end, and questioned how much arsenic and metals could be moving under the dam and into the Clark Fork River within the first few hundred yards below the dam. The commenter then recommended drilling an additional test well in this area.

RESPONSE: While the State acknowledges that contaminants may migrate through the alluvium under the dam, there is a lack of sufficient data to address this comment. If this is occurring, its impact on the Clark Fork River is not believed to be significant. The State believes that, insofar as its ability to accurately determine and quantify injury, the well proposed by the commenter is not necessary.

COMMENT: A commenter stated that because the stability of the source/plume is still in question, there is a high potential for additional injury in the not-too-distant future and this poses a high risk to human health and safety.

RESPONSE: While the stability of the source/plume is not known with certainty, the State does not agree that there is a high potential for additional injury in the not-to-distant future. The data indicate that the plume is stable and poses little risk to human health and safety given the present geochemical conditions.

COMMENT: A commenter observed that current response actions have done little to restore injured resources.

RESPONSE: The State agrees, but notes that the goal of response actions is not to restore injured resources.

COMMENT: A commenter stated that contaminants from Milltown Reservoir will reach the Missoula sole source aquifer because there is no geological barrier between the reservoir and the aquifer.

RESPONSE: Adsorption processes attenuating the arsenic

migrating from reservoir sediments to the Milltown alluvial aquifer act as a geological barrier between the reservoir and the aquifer.

ALTERNATIVES

COMMENT: A commenter believed that the alternatives considered for Milltown were too limited and that components of alternatives should be combined and new alternatives created.

RESPONSE: The State evaluated other options besides sediment removal, including pumping and treating of groundwater, subsurface containment using grout curtains or slurry walls, and rerouting the River. Sediment removal appeared to be the only viable alternative, given the difficult site conditions and the uncertainties associated with other kinds of approaches. The commenter fails to provide details on any particular alternative that should have been considered. Moreover, the commenter fails to persuade the State that the range of alternatives it considered did not allow for a reasoned selection. It should be noted that the State considered an additional alternative for the final RDP.

COMMENT: One commenter stated that the RDP did not consider an alternative based on porewater extraction and treatment. According to the commenter this alternative would entail extracting and treating sediment porewater before it enters the alluvial aquifer. The commenter envisioned a collection system comprised of a series of horizontal or vertical wells drilled into the sediments; a series of horizontal wells or drains from common collection points or sumps to capture the most contaminated porewater; or a sediment pump and treat system to "passively" drain the sediments or "actively" pump as much water from the sediments as possible.

RESPONSE: The transmissivity of reservoir sediments is quite low and reservoir sediments are also typically fine-grained. Accordingly, separation of the porewater from such fine-grained sediments would be very difficult.

COMMENT: One commenter stated that sediment removal could adversely impact wetland resources and proposed re-filling with clean material.

RESPONSE: Sediment removal would necessitate the removal of wetland vegetation and so would adversely impact wetland resources regardless of whether the excavated area was backfilled then and there or allowed to fill in naturally over time. An alternative was considered that entailed backfilling. Backfilling would enable wetlands vegetation to reestablish sooner than would be the case if the area was allowed to fill in naturally.

COMMENT: One commenter stated that the RDP should consider an alternative that would provide water for area residents. To support its position in this regard, the commenter stated that there are many private and public wells in the area that exceed the "projected" federal standard, identified by the commenter as 2 to 5 ug/l, or the current state standard, identified by the commenter as 0.018 ug/l.

RESPONSE: The State has sought to develop restoration alternatives that directly address injured resources. Furthermore, the State is unaware of the existence of wells in the area that exceed federal or state standards other than the wells at Milltown. The existing federal standard is 50 ug/l. The existing State standard is roughly equivalent to 20 to 25 ug/l. Wells that contain arsenic concentrations in the range of 2 to 5 ug/l are much closer to a baseline condition (3 ug/l) and do not exceed relevant state and federal standards.

DAM SAFETY/STABILITY

COMMENT: Commenters questioned the structural integrity of Milltown Dam and its ability to withstand a large flood event.

RESPONSE: The odds of such a dam break occurring in any given year have been calculated at 1 in 10,000.

COMMENT: One commenter wondered who was responsible for keeping Milltown Dam in good repair and safe in the long term. This commenter stated that the issue was not addressed in the Remedial Investigation and asked how the State could recommend leaving sediments in place without establishing who would be responsible for keeping Milltown Dam repaired and in good working order for the next 200 to 1000 years.

RESPONSE: Milltown Dam is a federally licensed facility. Accordingly, it is the responsibility of the Federal Energy Regulatory Commission (FERC) and the licensee (Montana Power Company) to ensure dam safety. The State is not in a position to establish or require ARCO to ensure dam maintenance over the long-term. Neither, however, did the State feel it was justified to cause the removal of some or all of the reservoir sediments. If and when the State recovers compensable value damages, the State will consider various options to ensure long-term dam maintenance.

DOWNSTREAM RELEASES

COMMENT: A commenter stated that a flood similar in size to the 1908 flood will scour and redeposit sediments on the floodplain downstream from Hellgate Canyon, with potential damage to the Missoula aquifer. The commenter provides the example of a well about one-half mile west of the Reserve Street bridge that contains arsenic as great as .079 mg/l. The commenter states that the source of the arsenic could be sediments scoured from behind the dam in the 1908 flood or deposited before the dam was built.

RESPONSE: Scouring and redeposition of sediments during a large flood event is a possibility. This issue was studied by EPA and ARCO in the continuing releases modeling effort, which concluded that deposition of reservoir sediments could cause localized contamination of the Missoula aquifer. It is not clear if the source of contamination in the referenced well is upstream sediments.

COMMENT: Commenters expressed the view that contaminated

sediments are very likely to move from the reservoir to downstream locations as a result of a catastrophic flood or earthquake.

RESPONSE: It is true that there is a possibility that there could be a large scale release of sediments from the reservoir in the event of a dam break coupled with a flood. It is also true that these events may not trigger such a release.

COMMENT: A commenter noted that a catastrophic event causing an uncontrolled release of contaminants will likely occur before natural recovery.

RESPONSE: There is no information available that would allow one to predict with certainty when a catastrophic event will occur. However, the continued releases modeling effort estimated that a worst-case scenario of a large magnitude flood destroying Milltown Dam and causing a large uncontrolled release of sediment had a chance of about 1 in 10,000 of occurring in any given year.

ALTERNATIVE EVALUATION AND SELECTION

COMMENT: A commenter suggested that ARCO's ability to absorb the costs of cleanup is a factor in selecting an alternative for Milltown.

RESPONSE: The ability of an entity to absorb the costs of restoration is not a relevant factor for selecting alternatives.

COMMENT: One commenter stated that, under the natural resource damage provisions of Superfund, the evaluation of a natural recovery/no-action alternative is primarily for comparison purposes and for providing a reference frame for judging more serious alternatives. Thus, the commenter asserts, the selection of a natural recovery/no-action alternative is justifiable only in the event a reasonable alternative cannot be found and institutional controls cannot be implemented.

RESPONSE: DOI natural resource damage assessment regulations require the consideration of a natural recovery/no-action alternative. 43 C.F.R. § 11.82(c)(2). This alternative, like all alternatives, must be evaluated based on all relevant factors including a specific list of factors established by the regulations. 43 C.F.R. § 11.82(d). Accordingly, the commenter is incorrect that inclusion of a natural recovery/no-action alternative is primarily for comparison purposes, and that such an alternative can only be selected if "a reasonable alternative cannot be found and institutional controls cannot be implemented."

COMMENT: A commenter stated that the selection of a natural recovery/no-action alternative, with its reliance on extreme long-term natural recovery and a limited amount of monitoring, was contrary to the spirit and intent of Superfund and did not protect the health and safety of the residents of Milltown and Missoula County.

RESPONSE: As just discussed, since natural recovery is explicitly contemplated by the statute and the regulations, the State does not believe that its selection of this alternative is, by itself, inconsistent with the goals of CERCLA. And, as noted in a response to an earlier comment, recovery times, while an important factor, are not dispositive. Like the commenter, the State would have preferred to have been able to select and implement a restoration alternative that would have achieved restoration in a more timely fashion than natural recovery will. Application of the factors, however, as informed by the State's judgment, prevented the State from selecting an action alternative. The State does not believe that the selection of a natural recovery/no-action alternative has compromised the health and safety of Milltown and Missoula County residents.

COMMENT: A commenter stated that the State's natural recovery/no-action alternative was inconsistent with local objectives and regulatory and enforcement actions of the Missoula Valley Water Quality District, the Montana Department of Health and Environmental Sciences (now DEQ), and the U.S. Environmental

Protection Agency.

RESPONSE: It is not clear from the comment how the natural recovery/no-action alternative was inconsistent with local objectives and regulatory and enforcement actions of other public agencies. But, even if such an inconsistency existed, the mere fact of the inconsistency would not be dispositive.

COMMENT: A commenter stated that costs should not have been a factor at Milltown because equally or more costly alternatives at other areas were selected.

RESPONSE: The cost of an alternative is a relevant factor in evaluating alternatives. It was just one of a number of factors that was considered; and it was considered in light of the overall characteristics of the alternative. Accordingly, the fact that an alternative that was not selected costs the same or less as an alternative that was selected indicates nothing.

COMMENT: The comment was made that selecting the natural recovery/no-action alternative at Milltown was contradictory to the evaluation of alternatives at other sites. Specifically, the commenter pointed to the rationale for rejecting the natural recovery alternative at Area One and the rationale for the selection of the most expensive restoration alternative for Silver Bow Creek.

RESPONSE: As an initial matter, it is impossible to compare between areas as the commenter seeks to do. Each area is different and considerations which favored or disfavored the selection of an alternative at one area simply were not in play at a different area. In an attempt to address the commenter's specific remarks, the State notes that with respect to Area One, natural recovery is discussed in terms of tens of thousands of years for restoration of groundwater. One difference between Area One and Milltown Reservoir is the comparatively high flux rate of groundwater through the sediments at Milltown Reservoir, which will be more favorable to natural recovery than the comparatively low flux of

groundwater at Area One. With respect to Silver Bow Creek, the extent and severity of injury to the entire Silver Bow Creek ecosystem requires an aggressive restoration action to address natural resource injuries.

COMMENT: At least two commenters downplayed the potential for uncontrolled releases occurring as a result of sediment excavation. These commenters believed that releases of contaminants from sediment excavation would be minimal and do not pose the same risk as leaving the sediments in-place. One commenter stated that the RDP did not contain an engineering analysis of the sediment removal option that described methods of stream diversion and sediment removal or measures to minimize disturbance and releases of contaminants. Finally, the comment was made that the State did not support its position with expert testimony.

RESPONSE: As an initial matter, the commenters appear to be under the mistaken impression that a decision to select a natural recovery/no-action alternative was based solely on a relative comparison between the risks to downstream resources associated with sediment excavation with the risks to downstream resources from a mass release. Next, while the commenters may believe that releases of contaminants from sediment excavation are not a matter of concern, the State and its experts disagree. The State is presented with no information indicating that it is in error on this point. Finally, the State did not perform an engineering analysis, nor is such an analysis required before the State can make a judgment on this issue. Rather, the State relied on experts who are knowledgeable and experienced in such matters. The State does not understand the remark on expert testimony well enough to provide a meaningful response.

COMMENT: A commenter stated that the RDP's analysis of recontamination of reservoir sediments from resedimentation was without basis. This commenter asserts that once the reservoir is filled with new and clean sediment most of the additional sediment coming from upstream will pass through the dam.

RESPONSE: The commenter errs in assuming that sediments coming from upstream will be "clean." In fact, sediments migrating from the Clark Fork Basin upstream, despite planned remediation and restoration actions, may still be sufficiently contaminated to result in a reinjury of the Milltown aquifer following sediment removal. Under a partial removal alternative, sediment would be derived from unexcavated areas of the reservoir, as well as from areas upstream of the reservoir. If sediment was derived from unexcavated areas of the reservoir, recontamination by arsenic, iron and manganese would occur. If sediments were completely removed from the reservoir, leaving the basin upstream as the primarily source of new sediment, recontamination by iron and manganese could occur; arsenic recontamination is more uncertain. The issue of reservoir resedimentation prompted the State to develop another alternative that called for backfilling the area to be excavated.

COMMENT: A commenter stated that the State was not justified in relying on perceived uncertainties associated with dam removal in its decision-making analysis. The commenter added that neither FERC nor the Montana Power Company have objected to dam removal.

RESPONSE: The State continues to believe that there are "uncertainties" associated with gaining approval for dam removal. The State is unaware of any instance where FERC has allowed such an action. Montana Power has not, to the State's knowledge, expressed its views on the subject, either in a filing with FERC or otherwise. If there is no action for FERC to take it would have no opportunity to express its views on the subject. In any event, the commenter's belief that because objections to dam removal have not, at present, been voiced by either FERC or Montana Power does not mean these entities would, in the future, seek dam removal or allow dam removal to go forward.

COMMENT: A commenter stated that the natural recovery/no-action alternative fails factors 2 through 8 of the ten factors listed by DOI and evaluated by the RDP.

RESPONSE: There are no numeric or narrative criteria that define a "pass/fail" threshold for each factor. Each factor is considered within the framework of a particular alternative. Alternatives are then evaluated and compared based on their overall relative merits as informed by the consideration of relevant factors.

COMMENT: The comment was made that with regard to the factors of cost-effectiveness and the relationship of expected costs to expected benefits, that it is better to address the situation at Milltown now while it is reasonably under control, as opposed to having to address a more difficult, costly situation later.

RESPONSE: It is not clear whether the comment is referencing the groundwater injury at Milltown or the potential for a catastrophic release of sediments from the reservoir. The State concluded, after considering issues related to a catastrophic release, that the best way to deal with groundwater injury was through natural recovery.

COMMENT: A commenter stated that the Restoration Plan failed to assess the potential impacts and costs of leaving sediments in place.

RESPONSE: Additional discussion of this issue has been added to the RDP.

COMMENT: A number of comments indicated dissatisfaction with the natural recovery/no-action alternative and advised the State to reevaluate its decision.

RESPONSE: The State has reevaluated its position in light of such comments, has developed a new alternative, and has expanded its decision-making discussion. The State continues to believe that natural recovery is the most appropriate action for Milltown Reservoir.

COMMENT: A commenter stated that the State's recommendation of Option 10D offers no protection for the people of Milltown from future contamination of their water source. The commenter noted that a county ordinance does not allow any new wells within 1,000 feet of a contaminated water source and the source of the present Milltown water system is about 850 feet from the boundary of the arsenic plume.

RESPONSE: The comment is correct in that the recommended option does not offer protection for the people of Milltown from future contamination of their water source were the plume of contamination to expand. However, the State and its experts do not believe the contamination is spreading. As the commenter is probably aware, during the development of the new water supply for Milltown the risk of additional wells becoming contaminated was addressed through the creation of a reserve fund.

COMMENT: A commenter expressed the opinion that the State of Montana was disregarding its obligation to look out for the best interests of the people of Montana, and was, rather, serving ARCO's interests.

RESPONSE: The State does not believe that it has selected an alternative at Milltown disregarding its obligations to the citizens of Montana. After implementing a decision-making process imposed by CERCLA and the DOI regulations, the State made the best decision it could under the circumstances. While the State's decision may not provide the level of protectiveness some believe is warranted, the State believes that its decision is appropriate.

COMMENT: A commenter asked if it would be inconsistent to ask or require area homeowners and businesses to take actions to protect groundwater while at the same time the State selects a natural recovery alternative for Milltown. The commenter added that citizens asked or required to pay substantial amounts to protect groundwater might think it unfair that ARCO had to pay only $300,000 for contamination at Milltown.

RESPONSE: The State does not believe there is any connection between the State's selection of a restoration alternative at Milltown and local, or even state, requirements to protect groundwater. The State's selection of a restoration alternative is, as discussed previously, pursuant to statutory and regulatory authority. Thus, the State perceives no inconsistency or unfairness.

INSTITUTIONAL CONTROLS

COMMENT: One commenter requested that a set of Comprehensive Institutional Controls (CICs) be implemented as soon as possible. According to the commenter, possible CICs included an immediately available alternative water source and a monitoring system along the north and east borders of the plume. The commenter estimated that the monitoring program would cost $100,000 per year, as opposed to the $45,000 per year estimated under the natural recovery/no-action alternative. The commenter proposed that the monitoring begin immediately.

RESPONSE: First, the State is not in a position to implement institutional controls at this time. The State has not yet collected damages to proceed with any kind of restoration work. Second, as a general matter, the State determined not to integrate an institutional control component into its restoration alternative because the State did not deem it necessary given the response actions that have occurred or are anticipated to occur at Milltown. Third, regarding the commenter's specific suggestions, the State does not believe the plume will expand so an alternative water source should not be necessary. However, in the unlikely event this does occur, as mentioned above, the situation will be addressed. On monitoring, while the State will monitor the site, has not determined precisely what monitoring will occur.

COMMENT: A commenter stated that no institutional controls have been established, and that neither Missoula County, the City of Missoula nor the Missoula City-County Health Board have designed any institutional controls or agreed to implement any institutional

controls which may be used as a substitute for cleanup action.

RESPONSE: The State is unsure exactly what point the commenter is making. The commenter may be remarking on the RDP's projection of response actions. This projection included, as a component, institutional controls. Issues related to institutional controls are better directed to the EPA.

COMMENT: A commenter stated that it disagreed with the State's projection of remedy (i.e., institutional controls), and asserted that it was inappropriate to make such a projection at this stage of the process.

RESPONSE: It is unclear if the commenter believes that institutional controls will not be a component of the selected response action or should not be a component of the response action. The projection of the response action is the State's best estimate and is required in order to assert a claim for natural resource damages.

COMMENT: A commenter remarked that the suggestion has been made that a monitoring program be used as an institutional control, and that the program might be administered by the Missoula County Health Department. But, the commenter added, that the Health Department may not be willing to assume responsibility for long-term monitoring.

RESPONSE: No such suggestion appears in the RDP. A long-term monitoring program undertaken as part of a restoration alternative would be administered by the State.

COMMENT: A commenter stated that neither dam safety standards nor the existence of a license from FERC can be used as an institutional control because they will not guarantee that the dam will remain in-place for thousands of years, the length of time the commenter believes the sediments will remain contaminated.

RESPONSE: The comment is noted.

COMMENT: A commenter urged the State to reconsider its selection to prod EPA to obtain a commitment from Montana Power Company and ARCO to keep the dam repaired for up to 1000 years.

RESPONSE: The State has reconsidered its preliminary determination but has not changed its position.

COMMENT: A commenter stated that support for the creation of the Natural Resource Damage Program was based on the understanding that the Program would attempt to seek restoration of groundwater resources above and beyond response actions. The commenter then adds that not only does the RDP speculate on what the response action will be, it selects a restoration alternative that does nothing further beyond its estimate of remedy.

RESPONSE: As stated above, the State was required to provide an estimate of remedy. In addition, and also as stated above, a natural recovery/no-action alternative is an alternative that must be considered. Accordingly, and contrary to the commenter's apparent belief, there is nothing internally inconsistent with selecting a natural recovery/no-action alternative in a situation where EPA declines to take active clean-up measures. As noted on several occasions, restoration decisions and response action decisions are governed by their own set of authorities and requirements.

COMMENT: One commenter said that the State had previously implied that a proportion of the damage claim would be used at Milltown to offset the ill-effects of the no-action alternative. The commenter went on to note that the State has not explained when, where, and how monies are to spent.

RESPONSE: The commenter provides no explanation for its inference so the State does not know what it might have said to allow the commenter to draw the inference. Compounding the problem

of interpreting and responding to the comment is that the State has made no such commitment either formally or informally. It is true that the State may recover damages associated with lost use and non-use values. These damages would also be used to restore injured resources. As discussed earlier, the State has not yet evaluated when, where and how these damages would be spent. The post-award Restoration Plan will outline these expenditures.

EPA/STATE COORDINATION

COMMENT: A commenter stated that the State has assumed that the U.S. Environmental Protection Agency will take care of any human health risk, so this issue was not addressed in the RDP. The commenter believes that utilizing this assumption leads to no protection afforded for Milltown and Missoula.

RESPONSE: The State does believe that the response action will be protective of public health. The revised RDP explicitly considered this issue and concluded that risks to public health would not prevent the selection of a natural recovery/no-action alternative at Milltown.

COMMENT: A commenter stated that EPA has expressed the opinion that the State's selection of a natural recovery/no-action alternative has undermined EPA, will prevent EPA from exercising its mandated responsibilities, and will make it more difficult for EPA to select a response action other than no-action.

RESPONSE: The State is unaware of any instance where EPA has made the statements attributed to it, so the State is unable to provide a full response. Nonetheless, the State is confident that EPA has never indicated anything of the sort. On numerous occasions EPA has informed the State that its response actions decisions are based on specific statutory criteria and the National Contingency Plan. EPA would not be performing its responsibilities if it allowed the State's selection of a restoration alternative pursuant to the natural resource damage provisions of CERCLA and

CECRA to influence its decision.

COMMENT: One commenter expressed concern that the State's selection of a natural recovery/no-action alternative would undermine a complete and fair consideration of all potential cleanup remedies through the EPA Superfund process.

RESPONSE: As just discussed, selection by the State of a restoration alternative under one set of criteria should have no influence on EPA's decision-making pursuant to a different set of criteria.

COMMENT: One commenter suggested that the State defer restoration decision-making until EPA has held public meetings to discuss cleanup options.

RESPONSE: Due to a court-ordered schedule, the State is unable to postpone preparation of the RDP. Nor does the State believe there is any reason to do so.

COMMENT: At least two commenters sought to have the State seek a modification in the court's scheduling order in order to enable EPA's decision-making to proceed prior to the selection by the State of a restoration alternative.

RESPONSE: As stated in a previous comment, the State does not believe that its selection of a restoration alternative will impact EPA's response action selection. Accordingly, altering the litigation schedule would not accomplish anything.

COMMENTS

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ADMINISTRATIVE RECORD

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NATURAL RESOURCE
DAMAGE PROGRAM

March 27, 1995

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RE: Comments on the State of Montana's Restoration Plan for the Clark Fork Basin

Dear Mr. Collins:

The Environmental Protection Agency (EPA) has the following comments on your January 1995 public comment draft Natural Resource Damage Restoration Determination Plan for the Upper Clark Fork River Basin. EPA understands that the public comment period was extended in this matter, and that, in view of coordination issues with your program, these comments will be considered timely within that extension.

1. The plan is generally thoughtful and moderate in its approach to evaluating and restoring the extensive damage caused by mining waste and other hazardous substances in the Clark Fork Basin. The State should be commended for its careful and thorough evaluation.

2. Your report states clearly that the projected remedial or response actions described in the Plan are not EPA decisions or binding predictions, but the Natural Resource Damage program's projection of that action. EPA would like to reiterate this same point for the record. For those operable units where a remedy has not yet been selected, it is impossible now to state with certainty what the ultimate EPA response action will be. EPA did not make the projections found in your plan, and believes that actual response decisons may be different than the NRD program's projected response actions, in some cases. EPA is in no way bound by the State's projections, and reserves all rights under CERCLA and the NCP to select response actions as appropriate.

3. The Restoration Determination Plan addresses the interworking of EPA selected response actions and natural resource damage restoration actions. In most cases, EPA believes that the two distinct actions can be implemented without disruption to either action, and will continue its efforts to coordinate with the

State of Montana in this regard. However, in the specific sites at issue here where actual restoration is likely to take place at times after remedy implementation, where there is a conflict, EPA believes that the response actions selected by EPA, which use the careful criteria for selection or response actions enacted by Congress under the CERCLA law, should remain intact or go forward, and that restoration actions for the same area should not conflict with the response action implementation. EPA is not willing to delay response action implementation until restoration plans are funded and made final, but will pursue response action implementation independently on our currently planned timetable. In addition, EPA believes that restoration objectives can be substantially achieved without implementing actions that would conflict with previously implemented response actions or response actions being implemented. EPA will continue to coordinate response decisions with the State of Montana in the hope that conflicts between response and restoration decisions can be avoided.

Thank you for the opportunity to comment on the plan.

Sincerely,

John F. Wardell
Director
Montana Office

DEPARTMENT OF JUSTICE
NATURAL RESOURCE DAMAGE LITIGATION PROGRAM

JOSEPH P. MAZUREK
ATTORNEY GENERAL

OLD LIVESTOCK BUILIDING
1310 EAST LOCKEY AVENUE

STATE OF MONTANA

(406) 444-0205 (OFFICE)
(406) 444-0236 (FAX)

PO BOX 201425
HELENA, MONTANA 59620-1425

April 10, 1995

Mr. Henry Elsen, Esq.
U.S. Environmental Protection Agency
301 S. Park Drawer 10096
Helena, Montana 59626-0096

Dear Henry:

Enclosed please find the comments dated March 17, 1995 submitted by EPA in regard to the State of Montana's Restoration Plan. I understand these comments were submitted in error. The comments submitted March 27, 1995 will be considered by the State of Montana and placed in our administrative record.

If you have any questions, please give me a call.

Sincerely,

Kathleen Coleman
Paralegal

cc: Rob Collins
Chuck Magraw

ADMINISTRATIVE RECORD

Stephen Schombel
2200 Applewood Lane
Missoula, MT 59801
March 9, 1995

Montana Natural Resources Damage Program
Old Livestock Building
1310 E. Lockey
Helena MT 59620-1425

RECEIVED
MAR 13 1995
NATURAL RESOURCE
DAMAGE PROGRAM

Dear Members of MT NRDP:

I am writing to you as a concerned citizen; concerned about the entire Upper Clark Fork Superfund cleanup and especially about the Milltown Reservoir section of the Superfund Cleanup. As you can see by my home address I am concerned because I live in an area that might be flooded during a 100-year flood on the Clark Fork River. In the event that the Milltown Dam is washed out during a large flood it is probable that my home will be flooded. I am not some nut crying for attention. I have looked closely at maps made from computer models that were made to show the effects of such a large flood.

There is one very big point that bothers me a lot about the whole Remedial Investigation the Environmental Protection Agency has conducted on the Milltown Site. First, some very serious questions have been raised about the ability of the 90 year old timber crib Milltown Dam to withstand the force of another large flood. Remember, newspaper articles from the time report that during the large flood of 1908 a section of the dam was dynamited away to relieve pressure on the main part of the structure. Engineers at the time are quoted as saying 'it was a miracle the whole dam didn't wash away." And the dam is 90 years older now and a crack has developed in the north end. Second, an important point - your own investigation states that if the sediments are left in place it will take about 200 years for the arsenic to become naturally absorbed and no longer a threat to water quality. You also state that it may take up to a thousand years for some of the metals to be neutralized. Third, in conclusion is the big bothersome point. Who is responsible for keeping the Milltown Dam in good repair and safe in the long term? It may not be safe even now. Montana Power Company will probably be responsible for the next 35 years if they get a relicense, but what happens after that? Will Montana Power continue to be responsible for the entire 200 some years or will the burden for dam maintenance fall on State or local governments? This is one point the EPA and ARCO seemed to have glossed over during their Remedial Investigation. How can you people of your Montana Natural Resource Damage Program recommend leaving the sediments in place without a more detailed delineation of what parties will be responsible for keeping the Milltown Dam repaired and in good working order for the entire 200 to 1000 year period it will take for the sediments to become naturally neutralized? I strongly urge you to reconsider your recommendation to take no action at Milltown and instead prod the EPA to get more commitment from Montana Power and ARCO to keep the dam repaired for up to 1000 years.

In addition, many questions have been raised about the water quality test well system that determines the boundaries of the plume of arsenic contaminated groundwater. You should consider such things while you take public comments on your no action at Milltown recommendation. Some have said that all of the wells were sampled either near the surface or just above the basement rocks, with no sampling done in the middle of the plume. Others have questioned the seismic studies and contouring that was done to map the

surface of the impermeable basement rocks below the sediments. There is also the question that wells farther downstream show contamination by arsenic. Not enough arsenic to exceed Federal Drinking Water Standards, yet still bothersome. More study should be done to see if these wells are linked to the Milltown site. Others say that recent well tests show that the levels of arsenic have increased during the past few years in the wells right next to the boundary of the contaminated plume. If true this would really bother me. Such questions have been raised by people with technical backgrounds and should be looked at again. What really bothers me is the fact that the north end of Milltown Dam was built on alluvium. This is shown from construction records Montana Power Company kept on the dam. Such alluvium is very permeable and unquestionably a lot of arsenic and metals are washed under the dam (and through the crack), and yet not one single water quality test well was drilled in the fishing access area below the dam to determine how much contamination was flowing beneath the dam and directly into the Clark Fork River within the first few hundred yards below the dam. I say that if the EPA will carry out its promise at recent public meetings to drill additional test wells then at least one well must be drilled in this fishing access area and near the crack.

Thank you for reading my comments, and I hope you will change your mind about leaving the sediments in place above the Milltown Dam. I know that it will be difficult for you to get funding for your damage claim, but if successful I hope you will spend some of the money on a better solution at the Milltown site.

Thank you,

Steve Schombel

Steve Schombel

MISSOULA COUNTY
MISSOULA

MISSOULA CITY-COUNTY HEALTH DEPARTMENT
301 W ALDER ST
MISSOULA MT 59802-4123
(406) 523-4755

ADMINISTRATIVE RECORD

Missoula Valley Water Quality District

March 23, 1995

RECEIVED
MAR 27 1995
NATURAL RESOURCE
DAMAGE PROGRAM

Mr. Robert G. Collins
Montana Natural Resource Damage Litigation Program
Montana Department of Justice
1310 East Lockey Ave
Helena MT 59620

RE: Restoration Determination Plan, Upper Clark Fork River Basin

Dear Mr. Collins,

Thank you for providing me with a copy of the above referenced document. Our Department and Board have had the opportunity to review the document, and request that you consider the following comments. I have also enclosed copies of resolutions concerning the restoration determination plan for the Milltown Reservoir site, which were adopted by the Missoula City-County Board of Health, the Missoula Valley Water Quality District Board of Directors, the Missoula Board of County Commissioners and the Missoula City Council.

The Missoula City-County Health Department strongly opposes the proposed no-action alternative for the restoration of the Milltown groundwater site.

1. No-Action inconsistent with local objectives and natural resource damage recovery objective. As stated in the document, federal regulations specify that the objective of restoration is to "return to baseline levels both the injured natural resources and the services that the natural resource provide to the public." 56 Fed. Reg. 19757 (col 1). The document goes on to make a distinction between restoration to baseline conditions and substantial recovery. It recognizes that some resources may not be able to be restored to baseline conditions, but that substantial recovery of those resource may be achieved within a reasonable time frame. The report states, on page 1-5, "By making a distinction between restoration to baseline and substantial recovery, the report acknowledges the severity of injury in the Upper Clark Fork River Basin and *emphasizes that the extent of injury and inability of human beings to fully redress the injury do not, by themselves, justify taking no action.* Indeed, actions that improve the condition of the resource and lead to substantial recovery, even if not producing short-term restoration to baseline, will accelerate restoration."

The restoration plan proposes no action to restore the groundwater resources at the Milltown site to baseline conditions or to achieve substantial recovery of that resource. This is wholly inconsistent with the objectives of the program. The proposal is also inconsistent with the regulatory and enforcement actions of the Missoula Valley Water Quality District, Montana Department of Health and Environmental Sciences, and the United States Environmental Protection Agency to abate other pollution sources in the Missoula Valley.

The United States EPA designated the Missoula Valley aquifer as a sole source aquifer in 1988. The Missoula City Council and Board of County Commissioners created the Missoula Valley Water Quality District in 1993, out of a strong concern for the protection of the Missoula Valley Aquifer and surface waters in the valley. Those same local governing bodies enacted strict aquifer protection regulations in August, 1994, a copy of which is enclosed with these comments. These regulations impose stringent requirements on local businesses and facilities to both prevent future pollution and to clean up existing contamination. The regulations make it unlawful to place waste or allow wastes to remain in a location where they are like to cause contamination of soil and water resources. These regulations are currently being enforced in this community, forcing businesses and facilities to remediate contamination problems caused by historic practices. For example, businesses have been required to remediate soil contamination caused by disposal of petroleum and solvent wastes into underground injection wells (sumps).

Under the EPA's Safe Drinking Water Act authority, the Missoula City County Health Department has required approximately 300 local businesses and facilities to permanently close all floor drains leading to underground injection wells, sometimes at considerable cost to small businesses and government agencies in our community.

Residents in the Missoula Valley have been required to hook up their homes to public sewer facilities, in order to correct serious nitrate and bacterial contamination of groundwater. Individual homeowners have paid up to $13,000 to comply.

The State Department of Health and Environmental Sciences has required the cleanup of contaminated sites through its state Superfund program. In no case so far has a no-action alternative been deemed acceptable under the state superfund program. Our department and the state DHES have required the owners of a gasoline pipeline and terminal facility to perform extensive remediation of groundwater contamination in the Missoula Valley, including soil removal, soil and groundwater vapor extraction and free product recovery.

These are just a few examples of what has been done in this community to protect groundwater. My point is that the community expectation has been clearly expressed that our sole source of drinking water should be protected, and cleaned up wherever it has been impacted by past practices. The Milltown site should not be an exception. In fact, because the Milltown site is by far the largest in the Valley, and because the responsible party is arguably more able to absorb the costs of cleanup than any other party for other sites in the valley, it is especially important to seek recovery of groundwater resources at this site.

How can we continue to ask or require that small businesses, homeowners, and other large corporations in this valley do their part to protect groundwater if the no-action alternative is selected for Milltown? Why should any one else feel it fair that they pay substantial amounts to protect our drinking water if ARCO pays only $300,000 to monitor the extensive contamination at Milltown?

We request in the strongest possible terms that the litigation program revise its proposed restoration plan for Milltown groundwater to include an alternative which will provide the most effective and permanent remediation of groundwater contamination and restoration or at least substantial recovery of the beneficial uses of that resource.

2. **NRDP No-Action recommendation may adversely impact federal Superfund process.** We are very concerned that the litigation program's recommendation for no action, if you retain this recommendation in the final report, will seriously undermine a complete and fair consideration of all potential cleanup remedies through the EPA Superfund process. As you know, the EPA has not yet selected a response action for the Milltown site. The feasibility study alternatives screening document was just recently available for public comment. I have enclosed a copy of our comments on this document so that you may be aware of the nature of our concerns with this cleanup alternatives document. It will be more than a year before a remedy is selected for this site. Your document states that you have consulted with the EPA and MDHES, considered ARCO's projected remedy and evaluated actions implemented at other sites in the watershed, and concluded that the only actions likely to be taken at the Milltown site will be institutional controls, such as well drilling restrictions, to prevent the use of contaminated groundwater. We vigorously disagree with this conclusion and assert that it is entirely inappropriate to make such as conclusion at this stage of the process.

Unless the NRDP proposes an alternative which would provide effective , restoration of the Milltown groundwater resource, we request that the state seek a modification in the court's scheduling order to allow a complete and thorough analysis of all available cleanup alternatives through the EPA Superfund process prior to selection of the state's preferred remedy for the Milltown groundwater restoration.

When residents and governing bodies in this community supported the creation of the natural resource damage program before the Montana Legislature, it was our clear understanding that the program would attempt to seek restoration of groundwater resources ***above and beyond*** the remedial actions taken through the EPA cleanup process. In order to accomplish this, we must first have knowledge of what action will be taken to cleanup the site through the federal Superfund program, and what residual damages remain after such action is taken. Instead of taking this sensible course , this restoration plan has relied on speculation regarding the EPA's and ARCO's intention for cleaning up the site, and proposed a restoration alternative that does nothing more than what is believed will be accomplished through the federal program.

As stated in the resolutions adopted by our local elected officials and Health Board, the community strongly opposes a plan which would not include action to remove contamination or to prevent the spread of contamination from the Milltown Reservoir site into downstream environs. The resolutions also state the community favors an alternative which would provide effective and permanent remediation of groundwater contamination for the site, and do not find acceptable an alternative which would allow continued discharge of contaminants into the sole source aquifer. The resolutions also oppose on-site storage of contaminated sediments behind the dam unless a remediation plan in implemented which will effectively contain those sediments and the contaminants they contain behind the dam in perpetuity.

3. **No-Action and Institutional Controls not adequate to accomplish restoration. Institutional controls not approved locally.** It has been suggested by ARCO that Federal Regulatory Commission dam safety standards can be used as an institutional control for the Milltown site. These standards can not truly ensure long-term effectiveness for the duration of the time when contamination may be present in these sediments, if no other action is taken to remove or reduce contamination. The dam safety standards can not ensure a safe dam for

thousands of years. Furthermore, it is not clear that the operator of the dam intends to maintain a FERC license to operate the facility for thousands of years.

No Institutional controls have been established specifically to deal with contamination at this site, and neither Missoula County, the City of Missoula or the Missoula City-County Health Board have designed any institutional controls or agreed to implement any institutional controls which may be used as a substitute for cleanup action at the Milltown Reservoir.

The Missoula Valley Aquifer Protection Ordinance prohibits the location of a new community or non-community/non-transient public supply wells within 1,000 feet of site such as Milltown where a release to groundwater has occurred. It does not restrict the location of transient public supply wells or private wells. The Department is authorized by the ordinance to grant a waiver to these siting restrictions in cases where no other practical site is available on the subject property.

The ordinance can not be used to enforce a requirement for any potential water user in the area to connect to the existing Milltown system. The ordinance only restricts the location of new wells in proximity to public water systems which are regulated by the Montana Public Service Commission, or are owned and operated by a county or consolidated city and county water and sewer district as defined in Title 7, Chapter 13, parts 22 and 23 MCA. This restriction applies to proposed new private wells which are within 200 feet of an existing public water system, as described above,where the property abuts the right-of-way in which the main is located, and when the owner of the existing public system approves of the connection. The restriction also applies to proposed new public supply wells which would be within 1,000 feet of an existing public water system, as described above, and when the owner of the existing public water system approves of the connection. Please refer to the aquifer protection ordinance or call me if you require any further clarification.

The Aquifer Protection Ordinance provides much less than a total well ban.

It has also been suggested that a monitoring program may be used as an IC, and the program might be administered by the Health Department. We have had no discussions with ARCO about such a monitoring program. Because our board and the commissioners have gone on record opposing a no action alternative for the site, we may not be willing to assume responsibility for such long-term monitoring.

4. Arsenic Plume stability in question. The restoration plan bases its selection of the no-action alternative, in part, on a belief that the arsenic plume is stable. However, the report provides very little substantiation to support this assumption. We question this assumption. The data which has been used to model the plume has been collected over a period of about eight years, during a period of extended drought. Groundwater contamination plumes are dynamic, reacting to a number of factors including hydraulic loading, seasonal variations in flow directions, variations in aquifer flow volume and other factors. Some data exists which suggest that arsenic concentrations in some monitoring wells within the existing plume have increased markedly. We may not entirely understand the geochemical processes at work in controlling the extent of the plume. In addition, data available from the Milltown to Hellgate aquifer study indicates concentrations exceeding the state groundwater standard downstream of the site. A sample taken at a monitoring well in the Bandman Flats area, for instance, indicated a concentration of 5.0 ug/l, and wells downstream in the Hellgate Canyon indicated concentrations

in the range of 1-2.4 ug/l. Also, wells sampled by Camp Dresser and McKee in Pinegrove, as part of the downstream screening study, exceeded the state standard (see figure 3 2-5 in that report). This data should be included in all future reports which evaluate the extent of the arsenic plume.

5. **Alternatives not considered or not fully considered.** The restoration plan does not consider several alternatives which should be considered in the remedy selection process. These include the following:

• **pore water extraction and treatment.** This alternative contemplates pumping contaminated groundwater from the pore water in the reservoir sediments. The only pump and treat alternative which has received consideration so far in either the state or EPA process involves pumping from the highly transmissive alluvial aquifer, as shown in Figure 1. this would involve pumping and treating tremendous volumes of water, on the order of 10 to 100 million gallons par day (MGD). The feasibility study screening document does not discuss pumping and treating contaminated pore water from reservoir sediments, as illustrated in Figure 2. This alternative should be considered by the natural resource damage program.

This alternative could employ a series of horizontal or vertical wells drilled in sediments to capture contaminated pore water before it enters the underlying and adjacent alluvial aquifer. When one considers that the vertical flux out of the reservoir sediments is calculated to be 20,000 to 200,000 cubic feet per day (0.15 to 1.5 MGD) it appears that capturing the pore water instead of the alluvial aquifer water would reduce the volume of water pumped and treated by approximately one to two orders of magnitude. A large amount of data regarding the configuration of the sediments and the concentration of contaminants in the sediments has already been collected. It seems reasonable that the data exists to evaluate this option in a detailed manner.

Horizontal drilling techniques have been used for many years, and in many applications. A rather efficient method to capture pore water before it enters the alluvial aquifer would be to drill a series of horizontal wells, or drains, from a common collection point or sump (see Figure 2). A number of sumps could be located throughout the reservoir, targeted to intercept the most contaminated pore water. If the quantity of water pumped from the sediments and treated were reduced to the range of 0.1 to 1.0 MGD (70 to 700 gallons per minute), we feel that groundwater pump and treatment would be a very feasible option.

In addition, a sediment pump and treat system could be designed to "passively" drain the sediments, or "actively" pump as much water from the sediments as possible. At a minimum, using a passive drain system, less arsenic would reach the alluvial aquifer than under present conditions. Potentially, using an active pumping system, arsenic could be extracted from the sediments at a faster rate than under present conditions, thus decreasing the number of years required to restore beneficial uses of groundwater at the site.

This pore water pump and treat alternative should be considered in combination with other alternatives included in the screening study.

• One-time removal of sediments. The restoration plan includes an alternative which would call for the removal of sediments in the reservoir. This alternative would result in the most short-term attainment of restoration goals. However, the restoration plan calls for re-

excavation of redeposited sediments at two times in the future. The document does not substantiate the need for re-excavation of these sediments. The majority of the most heavily contaminated sediments in the reservoir may have been deposited in the 1908 flood, when there were essentially no measures taken to prevent the release of contaminants from upstream mining and smelting sites. Such is not the case today. In f act, the restoration plan and EPA have propose or implemented many actions intended to minimize or eliminate the potential for transport of contaminated sediments by fluvial processes. It is very doubtful that sediments deposited in the reservoir in the future will be as heavily contaminated as those deposited early in this century. Thus, a one-time removal of sediments should be evaluated. This will certainly affect the cost of the proposed sediment removal option.

The sediment removal option was discounted in the restoration plan because of the potential for environmental damage caused by sediment disturbance. However, the document does not substantiate this assumption. The document does not include an engineering analysis of the sediment removal option, describing the methods of stream diversion and sediment removal or measures to minimize disturbance or contain potential contamination. Without such an analysis, we question the validity of the plan's assumption that environmental risks associated with sediment removal would be unacceptable.

In addition, the document fails to assess the potential impacts and costs of continuing contamination which will result from leaving sediments in place.

- **Removal and Fill.** The sediment removal option could adversely impact wetland resources in the reservoir area. An alternative involving removal and re-filling with clean material could potentially achieve the goal of restoration without eliminating the wetlands resources.

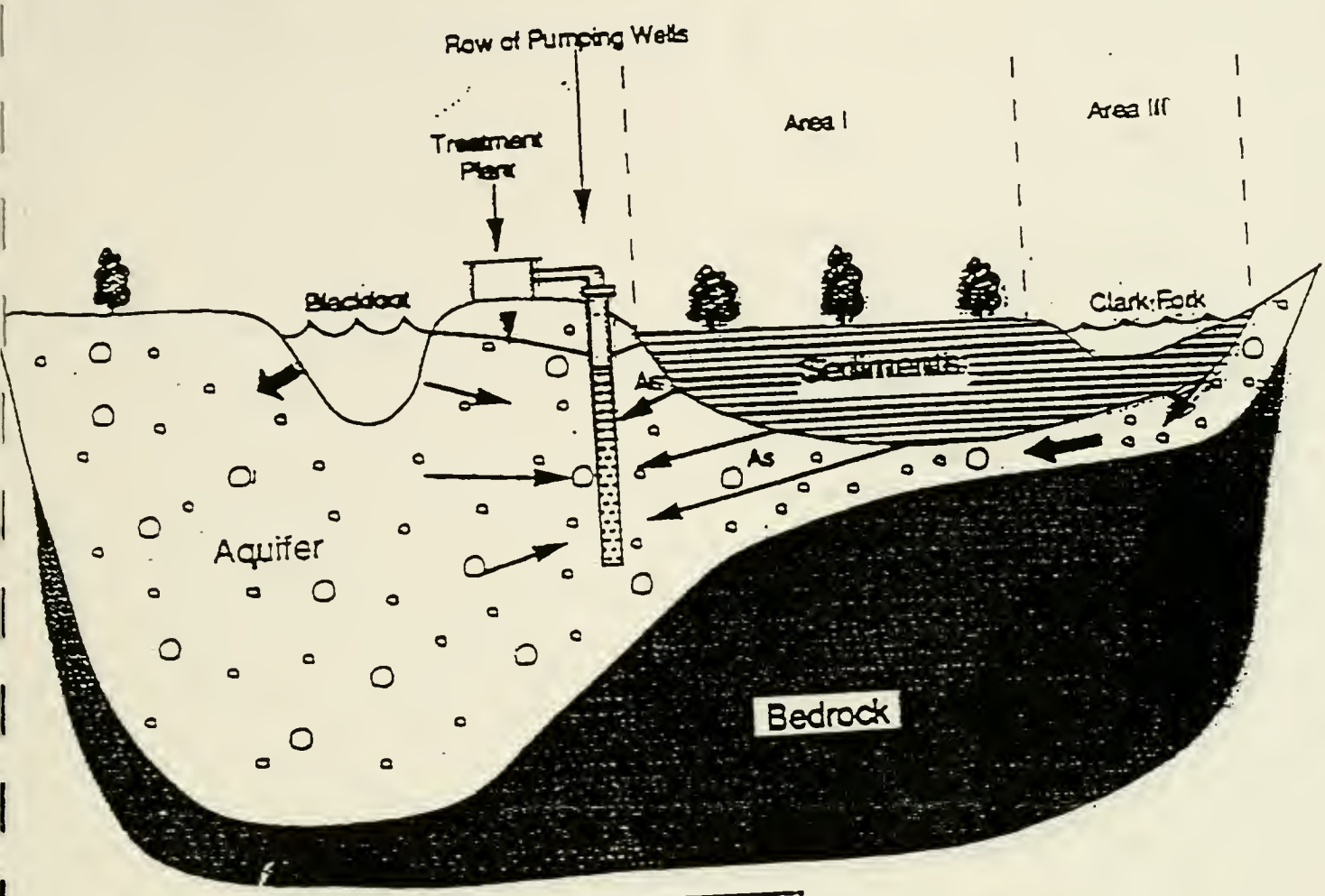
- **Provision of alternate water supplies.** This alternative, which could be implemented in combination with other alternatives for the site, would involve the provision of clean drinking water supplies to users or public and private drinking water wells in the area. The Milltown Water Users Association well serves 34 families in Milltown. There are many homes and businesses in the area served by private wells. Currently no one is drinking water which exceeds the federal drinking water standard for arsenic. But this standard, as you know, was established in 1942 - before the cancer-causing affects of arsenic were fully understood. The 1986 federal Safe Drinking Water Act amendments required EPA to revise the arsenic standard. This has not yet been accomplished, although the legislative deadline for promulgation of the new standard has passed. We now know that the current arsenic drinking water standard is inappropriate and should be revised. EPA expects it to be revised from its current level of 50 ug/l to somewhere between 2-5 ug/l. The current state groundwater standard for arsenic is much lower than that, 0.018 ug/l. Certainly there are many private and public wells which are currently serving water or may potentially serve water in exceedance of the projected federal standard or the current state standard for arsenic. The restoration plan should consider an alternative which would provide a healthy supply of water for the citizens of the state of Montana who reside in the Milltown area and downstream environs.

Sincerely,

Peter Nielsen

Peter Nielsen
Environmental Health Supervisor

Groundwater Extraction and Treatment



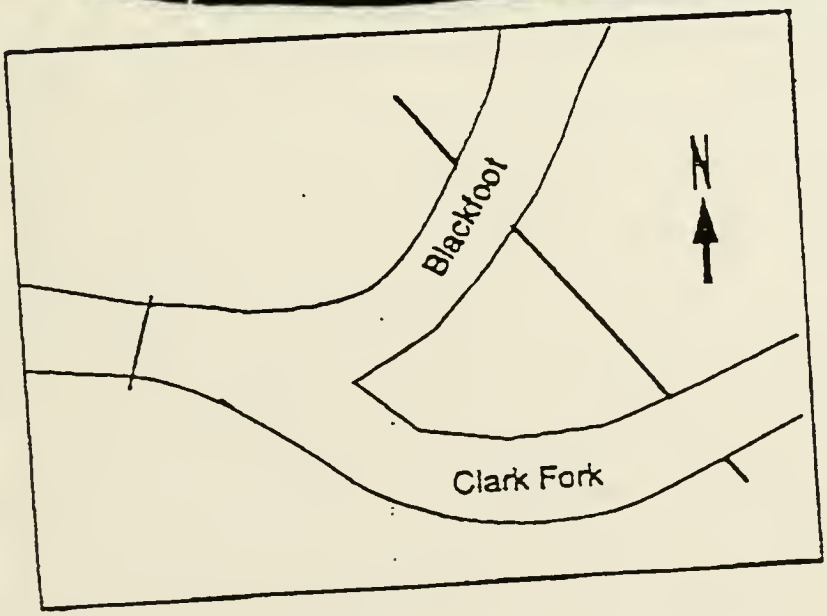
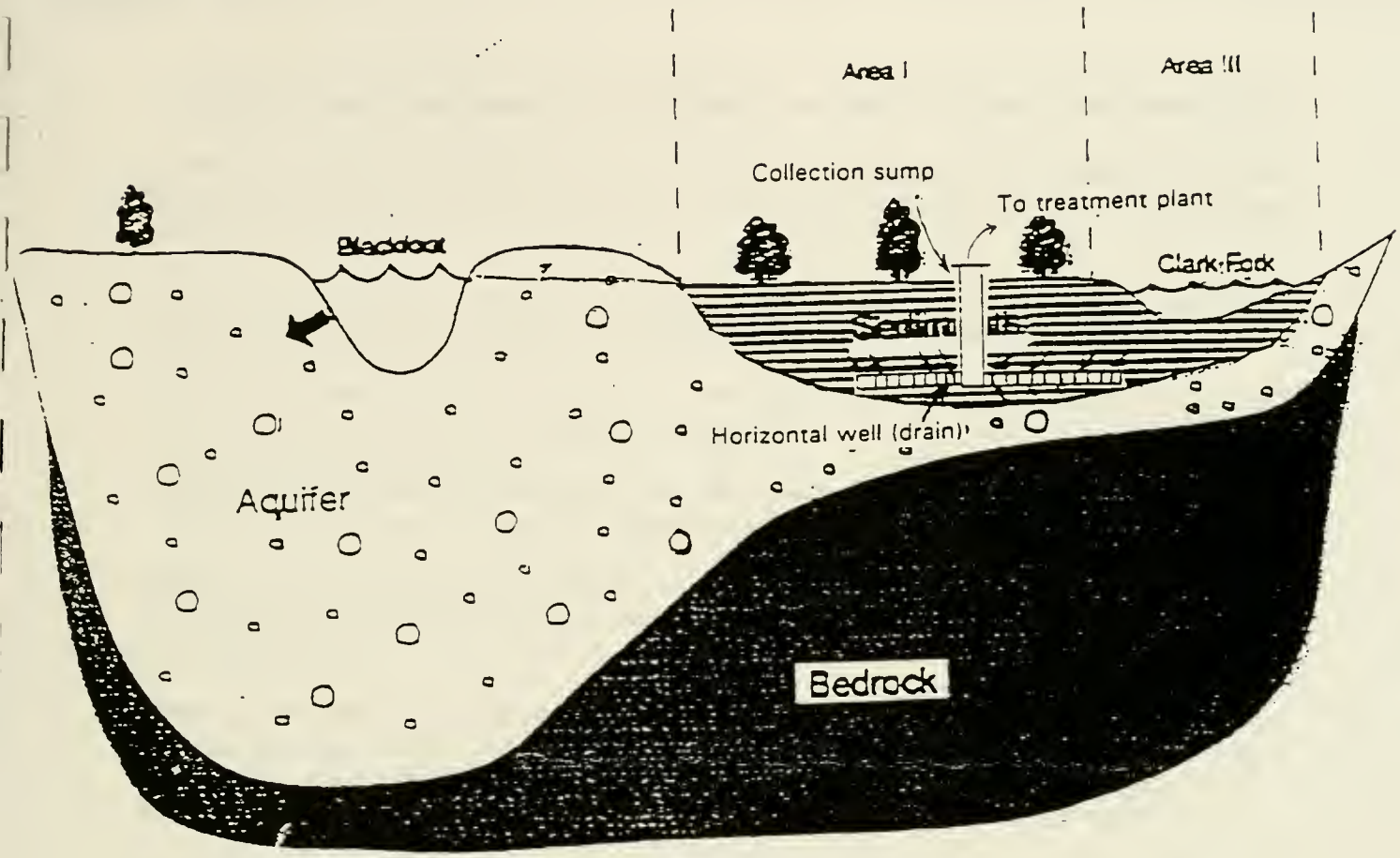


FIGURE 1

Sediment Pore Water Pump and Treatment



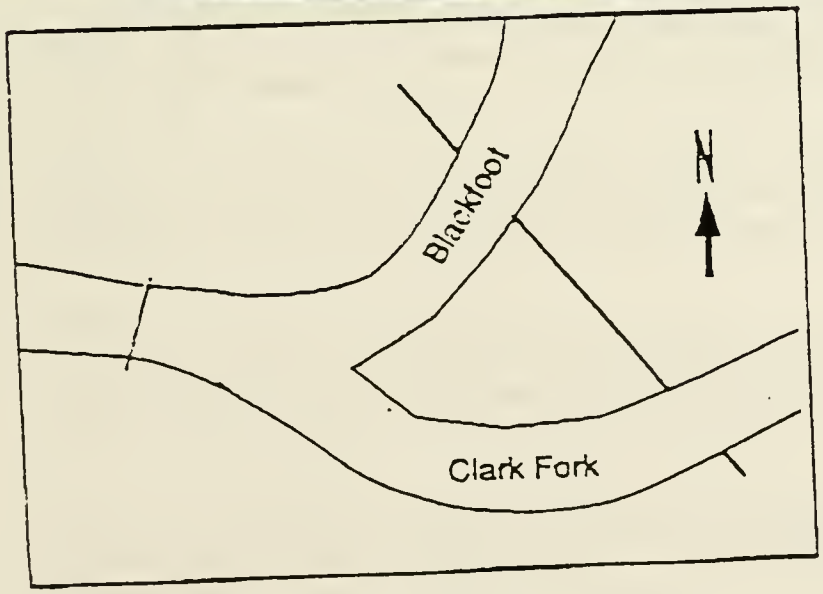


FIGURE 2

MISSOULA COUNTY
MISSOULA

MISSOULA CITY-COUNTY HEALTH DEPARTMENT
301 W ALDER ST
MISSOULA MT 59802-4123
(406) 523-4755

A RESOLUTION CONCERNING THE CLEANUP OF THE MILLTOWN SUPERFUND SITE

WHEREAS, pollution and degradation of surface and ground water pose immediate and long-term threats to the Missoula aquifer and the health, safety and welfare of the citizens of the Missoula Valley; and

WHEREAS, the Milltown to Hellgate aquifer has been found to be hydrologically connected to the Missoula Valley Sole Source Aquifer, in fact an extension of the Missoula Valley Aquifer; and

WHEREAS, the Missoula Valley aquifer in the Missoula urban area receives approximately 22% of its flow from the Milltown to Hellgate Aquifer; and

WHEREAS, the Milltown Reservoir Superfund site contains approximately 6.6 million cubic yards of sediments contaminated with approximately 620 tons of arsenic; and

WHEREAS, Approximately 5.5 trillion gallons per year of arsenic contaminated groundwater leaves the reservoir sediments and carries 730-7,300 pounds of arsenic per year into the Milltown area; and

WHEREAS, The arsenic contaminated groundwater plume extends downstream into the Milltown to Hellgate aquifer, which is now known to be an extension of the Missoula Valley Sole Source Aquifer, and monitoring wells downgradient of the Milltown Reservoir in the Bandman Flats area indicate arsenic contamination in exceedance of Montana groundwater standards; and

WHEREAS, the State of Montana has pursued litigation against the Atlantic Richfield Company to recover damages caused by injuries to the natural resources of the Clark Fork River Basin, including groundwater resources in the Milltown area; and

WHEREAS, the State Natual Resource Damage Litigation Program has released a report which states that "Without effective source removal, the discharge of tens of thousands to hundreds of thousands of acre feet of contaminated groundwater per year will persist from the Milltown Reservoir for hundreds of years"; and

WHEREAS, The State Natural Resource Damage Program has released a Restoration Determination Plan for the Upper Clark Fork River Basin which recommends no action be taken to remove the sources of contamination or prevent the spread of contamination from the Milltown Reservoir site into the downstream aquifer; and

WHEREAS, this recomendation is inconsistent with the standards expressed in the Missoula Valley Aquifer Protection Ordinance, which states: "It is unlawful for any person to: (a) cause contamination or to place, cause to be placed or allow to remain in place any substance in a location where it is likely to cause contamination"

WHEREAS, the State's no action recomendation is wholly inconsistent with the regulatory and eforcement actions of the Missoula Valley Water Quality District, Montana Department of Health

and Environmental Sciences and United States Environmental Protection Agency to abate other pollution sources within the Missoula Valley, and

WHEREAS, the Natural Resource Damage Litigation Program has established a public comment period on its restoration determination plan, which ends on February 21, 1995, and very few Missoula or Milltown residents became aware of this plan or the public comment period in time to review it and prepare written comments before this deadline.

NOW THEREFORE, BE IT RESOLVED THAT THE MISSOULA VALLEY WATER QUALITY DISTRICT BOARD AND THE MISSOULA CITY COUNTY HEALTH BOARD strongly oppose the recomendation of the Montana Natural Resource Litigation Program that no action be taken to remove contamination sources or to prevent the spread of contamination from the Milltown Reservoir site into downstream environs, and

NOW THEREFORE, BE IT FURTHER RESOLVED THAT THE MISSOULA VALLEY WATER QUALITY DISTRICT BOARD AND THE MISSOULA CITY COUNTY HEALTH BOARD favor an alternative which will provide the most effective and permanent remediation of groundwater contamination from the Milltown Reservoir site, and do not find acceptable an alternative which would allow continued discharge of contaminants at levels exceeding state and federal standards into an aquifer which provides Missoula with its sole source of drinking water, and

NOW THEREFORE, BE IT FURTHER RESOLVED THAT THE MISSOULA VALLEY WATER QUALITY DISTRICT BOARD AND THE MISSOULA CITY COUNTY HEALTH BOARD oppose the long-term, on site storage of contaminated sediments behind the Milltown Dam unless a remediation plan is implemented which will effectively contain those sediments and the contaminants they contain behind the dam in perpetuity, and

NOW THEREFORE, BE IT FURTHER RESOLVED THAT THE MISSOULA VALLEY WATER QUALITY DISTRICT BOARD AND THE MISSOULA CITY COUNTY HEALTH BOARD strongly requests that the public comment period for the proposed restoration determination plan be extended for a period of time sufficient to allow responsible public comment, and that this extension should extend for a period of at least 90 days.

ADOPTED BY THE MISSOULA VALLEY WATER QUALITY DISTRICT BOARD AND THE MISSOULA CITY COUNTY HEALTH BOARD ON FEBRUARY 16, 1995

Phil Schweber

PHIL SCHWEBER, CHAIR

RESOLUTION NUMBER 5700

A RESOLUTION OF THE MISSOULA CITY COUNCIL CONCERNING THE CLEANUP OF THE MILLTOWN SUPERFUND SITE.

WHEREAS, pollution and degradation of surface and ground water pose immediate and long-term threats to the Missoula aquifer and the health, safety and welfare of the citizens of the Missoula Valley; and

WHEREAS, the Milltown to Hellgate aquifer has been found to be hydrologically connected to the Missoula Valley Sole Source Aquifer, in fact an extension of the Missoula Valley Aquifer; and

WHEREAS, the Missoula Valley aquifer in the Missoula urban area receives approximately 22% of its flow from the Milltown to Hellgate Aquifer; and

WHEREAS, the Milltown Reservoir Superfund site contains approximately 6.6 million cubic yards of sediments contaminated with approximately 620 tons of arsenic; and

WHEREAS, Approximately 5.5 trillion gallons per year of arsenic contaminated groundwater leaves the reservoir sediments and carries 730-7,300 pounds of arsenic per year into the Milltown area; and

WHEREAS, The arsenic contaminated groundwater plume extends downstream into the Milltown to Hellgate aquifer, which is now known to be an extension of the Missoula Valley Sole Source Aquifer, and monitoring wells downgradient of the Milltown Reservoir in the Bandman Flats area indicate arsenic contamination in exceedance of Montana groundwater standards; and

WHEREAS, the State of Montana has pursued litigation against the Atlantic Richfield Company to recover damages caused by injuries to the natural resources of the Clark Fork River Basin, including groundwater resources in the Milltown area; and

WHEREAS, the State Natural Resource Damage Litigation Program has released a report which states that "Without effective source removal, the discharge of tens of thousands to hundreds of thousands of acre feet of contaminated groundwater per year will persist from the Milltown Reservoir for hundreds of years"; and

WHEREAS, The State Natural Resource Damage Program has released a Restoration Determination Plan for the Upper Clark Fork River Basin which recommends no action be taken to remove the sources of contamination or prevent the spread of contamination from the Milltown Reservoir site into the downstream aquifer; and

WHEREAS, this approach is inconsistent with the standards expressed in the Missoula Valley Aquifer Protection Ordinance, which states: "It is unlawful for any person to: (a) cause contamination or to place, cause to be placed or allow to remain in place any substance in a location where it is likely to cause contamination"; and

WHEREAS, the State's no action approach is wholly inconsistent with the regulatory and enforcement actions of the Missoula Valley Water Quality District, Montana Department of Health and Environmental Sciences and United States Environmental Protection Agency to abate other pollution sources within the Missoula Valley; and

WHEREAS, the Natural Resource Damage Litigation Program has established a public comment period on its restoration determination plan, which ends on February 21, 1995, and very few Missoula or Milltown residents became aware of this plan or the public comment period in time to review it and prepare written comments before this deadline.

NOW THEREFORE, BE IT RESOLVED THAT THE MISSOULA CITY COUNCIL strongly opposes the approach of the Montana Natural Resource Litigation Program that no action be taken to remove contamination sources or to prevent the spread of contamination from the Milltown Reservoir site into downstream environs; and

NOW THEREFORE, BE IT FURTHER RESOLVED THAT THE MISSOULA CITY COUNCIL favors an alternative which will provide the most effective and permanent remediation of groundwater contamination from the Milltown Reservoir site, and does not find acceptable an alternative which would allow continued discharge of contaminants

at levels exceeding state and federal standards into an aquifer which provides Missoula with its sole source of drinking water; and

NOW THEREFORE, BE IT FURTHER RESOLVED THAT THE MISSOULA CITY COUNCIL opposes the long-term, on site storage of contaminated sediments behind the Milltown Dam unless a remediation plan is implemented which will effectively contain those sediments and the contaminants they contain behind the dam in perpetuity; and

NOW THEREFORE, BE IT FURTHER RESOLVED THAT THE MISSOULA CITY COUNCIL strongly demands that the public comment period for the proposed restoration determination plan be extended for a period of time sufficient to allow responsible public comment, and that this extension should extend for a period of at least 90 days.

PASSED AND ADOPTED this 13th day of March, 1995.

ATTEST:

Martha L. Baker
City Clerk

APPROVED:

Daniel Kemmis
Mayor

(SEAL)

RESOLUTION NO. 95-014

A RESOLUTION CONCERNING THE CLEANUP OF THE MILLTOWN SUPERFUND SITE

WHEREAS, pollution and degradation of surface and ground water pose immediate and long-term threats to the Missoula aquifer and the health, safety and welfare of the citizens of the Missoula Valley; and

WHEREAS, the Milltown to Hellgate aquifer has been found to be hydrologically connected to the Missoula Valley Sole Source Aquifer, in fact an extension of the Missoula Valley Aquifer; and

WHEREAS, the Missoula Valley aquifer in the Missoula urban area receives approximately 22% of its flow from the Milltown to Hellgate Aquifer; and

WHEREAS, the Milltown Reservoir Superfund site contains approximately 6.6 million cubic yards of sediments contaminated with approximately 620 tons of arsenic; and

WHEREAS, Approximately 5.5 trillion gallons per year of arsenic contaminated groundwater leaves the reservoir sediments and carries 730-7,300 pounds of arsenic per year into the Milltown area; and

WHEREAS, The arsenic contaminated groundwater plume extends downstream into the Milltown to Hellgate aquifer, which is now known to be an extension of the Missoula Valley Sole Source Aquifer, and monitoring wells downgradient of the Milltown Reservoir in the Bandman Flats area indicate arsenic contamination in exceedance of Montana groundwater standards; and

WHEREAS, the State of Montana has pursued litigation against the Atlantic Richfield Company to recover damages caused by injuries to the natural resources of the Clark Fork River Basin, including groundwater resources in the Milltown area; and

WHEREAS, the State Natual Resource Damage Litigation Program has released a report which states that "Without effective source removal, the discharge of tens of thousands to hundreds of thousands of acre feet of contaminated groundwater per year will persist from the Milltown Reservoir for hundreds of years"; and

WHEREAS, The State Natural Resource Damage Program has released a Restoration Determination Plan for the Upper Clark Fork River Basin which recommends no action be taken to remove the sources of contamination or prevent the spread of contamination from the Milltown Reservoir site into the downstream aquifer; and

WHEREAS, this recomendation is inconsistent with the standards expressed in the Missoula Valley Aquifer Protection Ordinance, which states: "It is unlawful for any person to: (a) cause contamination or to place, cause to be placed or allow to remain in place any substance in a location where it is likely to cause contamination"

WHEREAS, the State's no action recomendation is wholly inconsistent with the regulatory and eforcement actions of the Missoula Valley Water Quality District, Montana Department of Health and Environmental Sciences and United States Environmental Protection Agency to abate other pollution sources within the Missoula Valley, and

WHEREAS, the Natural Resource Damage Litigation Program has established a public comment period on its restoration determination plan, which ends on February 21, 1995, and very few Missoula or Milltown residents became aware of this plan or the public comment period in time to review it and prepare written comments before this deadline.

NOW THEREFORE, BE IT RESOLVED THAT THE MISSOULA BOARD OF COUNTY COMMISSIONERS strongly oppose the recomendation of the Montana Natural Resource Litigation Program that no action be taken to remove contamination sources or to prevent the spread of contamination from the Milltown Reservoir site into downstream environs, and

NOW THEREFORE, BE IT FURTHER RESOLVED THAT THE MISSOULA BOARD OF COUNTY COMMISSIONERS favor an alternative which will provide the most effective and permanent remediation of groundwater contamination from the Milltown Reservoir site, and do not find acceptable an alternative which would allow continued discharge of contaminants at levels exceeding state and federal standards into an aquifer which provides Missoula with its sole source of drinking water, and

NOW THEREFORE, BE IT FURTHER RESOLVED THAT THE MISSOULA BOARD OF COUNTY COMMISSIONERS oppose the long-term, on site storage of contaminated sediments behind the Milltown Dam unless a remediation plan is implemented which will effectively contain those sediments and the contaminants they contain behind the dam in perpetuity, and

NOW THEREFORE, BE IT FURTHER RESOLVED THAT THE MISSOULA BOARD OF COUNTY COMMISSIONERS strongly demands that the public comment period for the proposed restoration determination plan be extended for a period of time sufficient to allow responsible public comment, and that this extension should extend for a period of at least 90 days.

ADOPTED BY THE MISSOULA BOARD OF COUNTY COMMISSIONERS ON FEBRUARY 27th, 1995.

APPROVED AS TO FORM & CONTENT:

DEPUTY COUNTY ATTORNEY

BOARD OF COUNTY COMMISSIONERS

BARBARA EVANS, CHAIRMAN

FERN HART, COMMISSIONER

ATTEST:

CLERK & RECORDER

MICHAEL KENNEDY, COMMISSIONER

MISSOULA COUNTY
MISSOULA

MISSOULA CITY-COUNTY HEALTH DEPARTMENT
301 W ALDER ST
MISSOULA MT 59802-4123

(406) 523-4755

Missoula Valley Water Quality District

March 10, 1995

Mr. Russ Forba
U.S. Environmental Protection Agency
301 S. Park
Helena MT 59626

RE: Milltown Draft Final Screening of Alternatives Summary Report

Dear Mr. Forba.

Thank you for providing me with a copy of the above referenced document last week. I have had the opportunity to review the document. and request that you consider the following comments.

Section 1.1 describes the purpose of the alternative screening. The document discusses so-called balancing factors. including short and long-term effectiveness. implementability and cost. Important "Threshold Factors" which should be included in a remedy selection are protection of human health and the environment and compliance with ARAR's. These were apparently not addressed in the screening document. As a result, alternatives which do not satisfy these threshold factors may be retained for a full analysis during the feasibility study. This seems inappropriate.

Section 1.2.1 describes the arsenic source area in the reservoir sediments, and briefly justifies the rationale for use of a 0.25 mg/l pore water concentration to delineate the source area. This is based on the 50 ug/l MCL, and not on the 3.18 ug/l state standard. It seems more appropriate to use the state groundwater standard for this determination.

Section 1.2.2 states that the 3.18 ug/l reporting standard for arrsenic is used because the state groundwater standard is below instrument detection limits. However, we are aware that a graphite furnace, low level detection method is available with a detection limit of1 ug/l. Energy Laboratories uses this method. We have processed many samples with lower detection limits than 3 ug/l, and such data is currently available on wells monitoring by Land and Water Consulting as part of the Milltown to Hellgate aquifer study. In fact, public water supply data for the Milltown Water Users Assc. well is also expressed with a detection llimit of 1 ug/l.

This section describes the extent of the plume containing concentrations in excess of the 3.18 mg/l standard. However, data available from the Milltown to Hellgate aquifer study is not included in this summary. This data indicates concentrations exceeding 3.18 ug/l well downstream of the site. Also, wells sampled by Camp Dresser and McKee in Pinegrove, as part of the downstream screening study, exceeded the state standard (see figure 3 2-5 in that report). This data should be included in all future reports which evaluate the extent of the arsenic plume.

Section 1.2.3 describes previous response actions and the Milltown Water Users Assc. well. I understand that there is some public concern over the frequency of sampling of this well for arsenic. Current Safe Drinking Water Act monitoring requirements call for one sample every three years for a small community system using groundwater. We have records on file at our department which indicate that the well has been monitored in 1984, 1989 and 1992. Our database indicates that the 1984 sample contained 0.001 mg/l, and the other samples contained less than 0.001 mg/l arsenic.

Section 1.2.4 states that "Current Missoula County land use plans call for limited future development in the area with emphasis on preservation of open space and reinforcement of the existing recreational uses." However, the document also contains a figure which portrays the existing zoning of the area, which includes rural residential, residential with covenants, commercial, residential, light industrial and heavy industrial designations. It appears that these land uses, then, would be permitted in this area. I recommend further clarification, if necessary, from the Missoula Office of Community Development or Missoula County rural Planning Office.

Section 2.1.1 states that the remedial action alternative is to return ground water to its beneficial use within a reasonable time frame, where practicable. The Missoula City County Health Board and Missoula County Commissioners have adopted a resolution opposing the state Natural Resource Damage Program's proposed no action alternative, which has suggested that it will take hundreds or thousands of years for natural groundwater recovery at the site. We do not believe it is appropriate to retain the IC's/no action alternative for further analysis, based on its inability to restore beneficial uses of groundwater within a reasonable period of time.

Section 2.2.1 contains apparent errors in standards. These should be 0.018 ug/l As, 1.1 ug/l CD and 12 ug/l Cu.

Section 2.3.2 (5) states that FERC dam safety criteria and standards and appropriate Montana dam safety standards are PRAGs for the sediments. These standards can not truly ensure long-term effectiveness for the duration of the time when contamination may be present in these sediments, if no other action is taken to remove or reduce contamination. The dam safety standards can not ensure a safe dam for thousands of years.

Section 3.0 states that a number of IC's are already in place at the present time. No Institutional controls have been established specifically to deal with contamination at this site, and neither Missoula County, the City of Missoula or the Missoula City-County Health Board have designed any institutional controls or agreed to implement any institutional controls which may be used as a substitute for cleanup action at the Milltown Reservoir.

Section 3.2b repeats the statement that institutional controls already exist at the site. Please note that the Missoula Valley Aquifer Protection Ordinance is not a County ordinance. It is Chapter 13 of the Missoula Municipal Code, and it is effective within five miles of the Missoula City limits on lands that are also within the Missoula Valley Water Quality District. This section also states that current residents in the area are served by the Milltown Water Users Assc. Well. This well, as I understand it, serves only 34 homes in the area. There are also a significant number of private wells serving homes and businesses in the area.

This section states that the aquifer protection ordinance prohibits construction of new water supply wells within 1,000 feet of a site where a release to ground water has been reported. This is not correct. The ordinance prohibits the location of a new community or non-community/non-transient public supply wells within 1,000 feet of such a site. It does not restrict the location of transient public supply wells or private wells. The Department is authorized by the ordinance to grant a waiver to these siting restrictions in cases where no other practical site is available on the subject property.

This section also states that the ordinance can be used to enforce a requirement for any potential water user in the area to connect to the existing Milltown system. This is also incorrect. The ordinance only restricts the location of new wells in proximity to public water systems which are regulated by the Montana Public Service Commission, or are owned and operated by a county or consolidated city and county water and sewer district as defined in Title 7, Chapter 13, parts 22 and 23 MCA. This restriction applies to proposed new private wells which are within 200 feet of an existing public water system, as described above,where the property abuts the right-of-way in which the main is located, and when the owner of the existing public system approves of the connection. The restriction also applies to proposed new public supply wells which would be within 1,000 feet of an existing public water system, as described above, and when the owner of the existing public water system approves of the connection. Please refer to the aquifer protection ordinance or call me if you require any further clarification.

The Aquifer Protection Ordinance provides much less than the total well ban portrayed by the screening document.

This section also states that MPC is expected to apply for a new FERC license, covering up to 50 years. What if they don't apply for or receive such a license? This section repeats the statement that FERC and state dam regulations will ensure long-term effectiveness. As mentioned earlier in these comments, these regulations can not ensure effectiveness for thousands of years.

This section also states that a monitoring program may be used as an IC, and the program might be administered by the Health Department. We have had no discussions with ARCO about such a monitoring program. Because our board and the commissioners have gone on record opposing a no action alternative for the site, we may not be willing to assume responsibility for such long-term monitoring.

Please note that throughout the document the Missoula City-County Health Department is referred to as the County Health Department.

Section 3.5 describes Alternative 5, ground water extraction and treatment. This alternative only examines pumping contaminated groundwater from the highly transmissive alluvial aquifer, as shown in Figure 1. this would involve pumping and treating tremendous volumes of water, on the order of 10 to 100 million gallons par day (MGD). The screening document does not discuss pumping and treating contaminated pore water from reservoir sediments, as illustrated in Figure 2. Please include this alternative for review in the final screening document and the feasibility study.

This alternative could employ a series of horizontal or vertical wells drilled in sediments to capture contaminated pore water <u>before</u> it enters the underlying and adjacent alluvial aquifer.

When one considers that the vertical flux out of the reservoir sediments is calculated to be 20,000 to 200,000 cubic feet per day (0.15 to 1.5 MGD) it appears that capturing the pore water instead of the alluvial aquifer water would reduce the volume of water pumped and treated by approximately one to two orders of magnitude. A large amount of data regarding the configuration of the sediments and the concentration of contaminants in the sediments has already been collected. It seems reasonable that the data exists to evaluate this option in a detailed manner.

Horizontal drilling techniques have been used for many years, and in many applications. A rather efficient method to capture pore water before it enters the alluvial aquifer would be to drill a series of horizontal wells, or drains, from a common collection point or sump (see Figure 2). A number of sumps could be located throughout the reservoir, targeted to intercept the most contaminated pore water. If the quantity of water pumped from the sediments and treated were reduced to the range of 0.1 to 1.0 MGD (70 to 700 gallons per minute), we feel that groundwater pump and treatment would be a very feasible option.

In addition, a sediment pump and treat system could be designed to "passively" drain the sediments, or "actively" pump as much water from the sediments as possible. At a minimum, using a passive drain system, less arsenic would reach the alluvial aquifer than under present conditions. Potentially, using an active pumping system, arsenic could be extracted from the sediments at a faster rate than under present conditions, thus decreasing the number of years required to restore beneficial uses of groundwater at the site.

This pore water pump and treat alternative should be considered in combination with other alternatives included in the screening study.

Thank you for considering these comments. Please contact me if the Missoula City County Health Department may be of any assistance with this important project.

Sincerely,

Peter Nielsen

Peter Nielsen
Environmental Health Supervisor

ORDINANCE NO. _____

AN ORDINANCE ENACTING CHAPTER 13.26 MISSOULA MUNICIPAL CODE ENTITLED AQUIFER PROTECTION BY ENACTING SECTIONS 13.26.010 THROUGH 13.26.150.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MISSOULA, MONTANA THAT CHAPTER 13.26 BE ENACTED BY ENACTING SECTIONS 13.26.010 THROUGH 13.26.150 MISSOULA MUNICIPAL CODE, PROVIDING AS FOLLOWS:

Section 13.26.010 SHORT TITLE; APPLICABILITY; CONSTRUCTION.

This Ordinance shall be known as the "Missoula Valley Aquifer Protection Ordinance." It is intended to protect the public health, safety and general welfare of those utilizing the Missoula Valley Aquifer for drinking water. The provisions of the Ordinance are deemed to be a health ordinance and shall be effective within the City of Missoula and all places within five miles outside the city limits that are within the boundary of the Missoula Valley Water Quality District pursuant to §7-4-4306 MCA (1993). This Ordinance establishes prohibitions and restrictions to prevent surface water and groundwater contamination, and to protect public health, safety and welfare. This Ordinance shall be broadly construed to effect its purposes. Nothing in this Ordinance shall relieve a person from the requirements of any other federal, state, or local law. If any provision of this Ordinance duplicates any local, state or federal statute or regulation, the local, state or federal statute or regulation shall govern. However, if the requirements of this Ordinance are more stringent than the requirements of the local, state or federal statute or regulation, the requirements of this Ordinance shall govern.

Section 13.26.020 LEGISLATIVE INTENT AND PURPOSE

In order to protect the Missoula Valley's sole source of drinking water and to secure and promote the general public health, safety and welfare, the Missoula City Council declares that:

(a) the improper storage, handling, use, transport, production or disposal of certain substances in the Missoula Valley is potentially harmful to the quality of water in the Missoula Valley Aquifer and to drinking water obtained by the use of private and public supply wells, and that certain activities involving the use of certain substances should be managed to prevent water contamination.
(b) affirmative measures to prevent pollution of the aquifer are the most effective means available to protect water quality.
(c) in order to effectively protect surface and groundwater, local authority is needed to require pollution prevention measures at facilities which handle significant quantities of certain substances, and to prohibit and deter activities which pose threats to the quality of the Missoula Valley Aquifer.
(d) the construction, development and use of new public water supply wells in proximity to existing sources of contamination is potentially harmful to the quality of drinking water obtained from such wells. The location of identified contaminant sources which pose serious threats of contamination should also be prohibited in proximity to public drinking water wells, in order to minimize the risk of contamination.

Section 13.26.030 DEFINITIONS

For purposes of this Ordinance, the following terms have the following meanings unless the context clearly indicates otherwise:

1. Aboveground Storage Tank (AST) - Any one or combination of tanks that is used to contain an accumulation of Regulated Substance, and the volume of which is more than 90% above the surface of the ground.

2. Aquifer - A water-bearing, subsurface formation capable of yielding sufficient quantities of water for beneficial use.

3. Aquifer Protection Area - The areas within the City of Missoula and within five miles outside the Missoula city limits which are within the boundaries of the Missoula Valley Water Quality District.

4. Board - The Board of Directors of the Missoula Valley Water Quality District.

5. Bulk Petroleum Storage Facility - A facility used for storage of petroleum products for marketing or wholesale distribution that has a total bulk storage capacity of 50,000 gallons or more.

6. Chemical Manufacturing Facility - A facility having a Standard Industry Class Code (SIC Code) between 2800 and 2899 which handles Regulated Substances in an amount equal to or greater than threshold quantities.

7. Class II Landfill - An area of land or an excavation, as defined in Montana Administrative Rules A.R.M. §16.14.502, where group II or group III wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile. Group II and III wastes are defined in Montana Administrative Rules, A.R.M. §16.14.503.

8. Class III Landfill - An area of land or an excavation, as defined in Montana Administrative Rules A.R.M. §16.14.502, where group III wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile. Group III wastes are defined in Montana Administrative Rules, A.R.M. §16.14.503.

9. Closure Permit - A permit issued by the Department in accordance with section 13.26.060 of this Ordinance when a facility is permanently closed, or has been abandoned for one year.

10. Community Water System - Any public water supply system, as defined in A.R.M. §16.20.401(31)(a), which serves at least ten service connections used by year-round residents or regularly serves at least 25 year-round residents.

11. Component - Any constituent part of a unit or any group of constituent parts of a unit which are assembled to perform a specific function.

12. Contamination - The presence of any substance (chemical, radiological, or biological) or any condition (temperature, pH, taste, color, odor, turbidity) in soil or water which may create or threaten to create a hazard to human health or the environment, or impair the usefulness of the soil or water.

13. Department - The Missoula Valley Water Quality District.

14. Dry Cleaning Establishment - Any facility that uses a transfer machine, dry-to-dry vented unit, or dry-to-dry closed loop unit with one or more of the following solvents to clean clothing or other materials: perchloroethylene; trichlorotriflouroethane (CFC-113); CFC-11; stoddard solvent; 1,1,1-Trichloroethane; HCFC 14 lb.; HCFC-123 lb.; and HCFC-225 lb.

15. EPA - United States Environmental Protection Agency.

16. Facility - An area, building or buildings, appurtenant structures or surrounding land area used by a person.

17. Fleet - More than 5 vehicles or locomotives.

18. Fueling Facility - A facility that dispenses petroleum products for commercial sale, public use, or for fleet vehicle operation, excluding bulk petroleum storage facilities and farm and residential tanks of 1100 gallons or less capacity used for storing motor fuel for non commercial purposes.

19. Future Wellhead Reservation Area - The surface area overlying a portion of the Missoula Valley Aquifer which, because of aquifer recharge, groundwater flow and potential sources of contamination, should be protected against contamination to assure high quality groundwater for future generations.

20. Grass Infiltration Swale - A vegetative-lined infiltration cell designed and constructed in accordance with Department standards to collect and treat contaminants in storm water runoff.

21. Groundwater - Water that fills the interconnected spaces of material below the water table (upper limit of saturation), or water which is held in the unsaturated zone by capillary action.

22. Handle - To use, generate, process, produce, package, treat, store, emit, discharge or dispose of a Regulated Substance, excluding (a) handling during continuous non-stop transit, (b) transit via pipeline, and (c) handling of parcels and packages by the United States Postal Service, motor freight companies, and private delivery services.

23. Hazardous Waste - A hazardous waste as defined pursuant to section 1004(5) of the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6903(5), as amended, including a substance listed or identified in 40 CFR 261.

24. Hazardous Waste Management Facility - All contiguous land, and structures, other appurtenances, and improvements on the land used for treating, storing, or disposing of a hazardous waste, and that are required under Montana Hazardous Waste Administrative Rules, A.R.M. §16.44.103, to have a hazardous waste management permit. A Hazardous Waste Management Facility may consist of several treatment, storage, or disposal operational units.

25. Industrial or Commercial Injection Well - A well or septic system that receives industrial or commercial wastes from a public or private facility, excluding wells or septic systems used solely for storm water discharge, sanitary waste discharge and/or discharge or extraction of non-contact heating and cooling system water.

26. Missoula Valley Aquifer - The aquifer underlying the Missoula Valley which supplies the area with water.

27. New - Constructed, installed or brought into operation after the effective date of this Ordinance.

28. Noncomplying Activity - An activity involving the handling of a Regulated Substance in an amount equal to or greater than its threshold quantity within a Future Wellhead Reservation Area.

29. Non-transient Non-community water system - Any public water supply system as defined in A.R.M. §16.20.202(31)(b)(i) that is not a community water system and that regularly serves at least 25 of the same persons over six months per year.

30. Perchloroethylene (C_2CL_4) - A colorless liquid used as a dry cleaning fluid; general degreaser of metals; solvent for waxes, fats, oils, and gums; constituent of printing inks and paint removers. Synonyms include, Tetrachloroethylene, Tetrachloroethene, PCE, PERC.

31. Person - Any natural person, individual, public or private corporation, firm, association, joint venture, partnership, municipality, governmental agency, political subdivision, public officer or any other entity whatsoever or any combination of such, jointly or severally.

32. Piping Manifold - The area(s) of a piping system fitted with apertures for making multiple connections.

33. Pollution Prevention Permit - A permit required of a person who owns, operates or controls a facility that handles any Regulated Substance in an amount equal to or greater than four times its threshold quantity. Pollution Prevention Permits are issued by the Department in accordance with section 13.26.050 of this Ordinance.

34. Primary Container - A container which comes into immediate contact with a Regulated Substance.

35. Public Sewage Disposal System - A system, as defined in §75-6-102(11) MCA, for collection, transportation, treatment or disposal of sewage that is designed to serve or serves ten or more families or 25 or more persons daily for a period of at least 60 days out of the calendar year.

36. Public Water Supply System - A system, as defined in §75-6-102(12) MCA, for the provision of water for human consumption from any community well, water hauler for cisterns, water bottling plant, water dispenser, or other water supply that is designed to serve or serves 10 or more families or 25 or more persons daily or has at least 10 service connections at least 60 days out of the calendar year.

37. Regulated Substance - Any liquid substance, semi-liquid substance, or soluble solid on the most current Superfund Amendments and Reauthorization Act (SARA), Title III List of Lists published by the Office of Pollution Prevention and Toxic Substances, U.S. Environmental Protection Agency, Washington D.C., any petroleum product, any hazardous waste, or any other substances that the Board determines, following public review, may threaten contamination of the Missoula Valley Aquifer, excluding substances used for personal household use. The Board may, following public review and comment, remove a substance from the list of Regulated Substances. The Department shall also review for de-listing all Regulated Substances approved for potable water treatment by the American Water Well Association (AWWA) within one year of enactment of this Ordinance.

38. Release - Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of a regulated substance into the environment (including the past release of a regulated substance), but excluding (a) releases contained in a secondary containment area or the indoor work place provided the release does not exit the indoor work place, (b) the use of pesticides and fertilizers as defined in §80-8-102(30) MCA and §80-8-102(2) MCA when they are applied in accordance with approved federal and state labels, and (c) any discharge permitted by a local, state, or federal agency.

39. Replacement - Replacement or replace shall mean:

(a) Replacing, repairing, upgrading or improving a facility at a cost which equals or exceeds 50% of the value of the facility at the time of such act.

(b) Replacing a component of a facility.

(c) Reoccupation of a facility, reuse of a component at a facility, or restarting an activity which has been out of service or not practiced for a period of one year.

40. Secondary Containment - Containment external to and separate from the primary container adequate to prevent the release of Regulated Substances to native soil, surface water, or groundwater. The secondary containment structure or cell must:

(a) be non-reactive and resistant to the materials contained;

(b) prevent infiltration of any Regulated Substance into the ground in the event of a release from the primary storage container;

(c) isolate the Regulated Substance from soils, injection wells, floor drains, or any other potential surface and groundwater entry point; and

(d) contain at least 110% of the volume of the largest container, or 10% of the aggregate volume of all containers, whichever is greater.

A covered building or structure may fulfill the secondary containment requirements of this Ordinance, provided the building or structure has an impermeable floor and walls and the release of a Regulated Substance would remain in the building or structure.

41. Soluble Solid - A solid that exists in a powder form and has a particle size less than 100 microns, is handled in solution or molten form, or meets the criteria for a National Fire Protection Association (NFPA) rating of 2, 3, or 4 for reactivity.

42. Storm Water Injection Well - A structure, pit or hole that primarily receives storm water runoff from paved areas, including, but not limited to, parking lots, streets, residential subdivisions, and highways.

43. Tank - Stationary device designed to contain an accumulation of substances and constructed of non-earthen materials (e.g. concrete, steel, plastic) that provide structural support.

44. Tank Fueling Area - The area surrounding the above or underground storage tanks subject to releases of petroleum products during tank fueling, including the area surrounding the tanker truck during fueling.

45. Threshold Quantity - The following quantities of Regulated Substances (excluding products in vehicle fuel tanks, aerosol spray cans, products used for research at educational institution laboratories, and substances sold for retail in a container equal to or less than 5 gallons capacity) handled at a facility at any one time, regardless of location, number of containers, or method of storage, shall constitute the Threshold Quantity:

(a) For those Regulated Substances specifically listed in the Superfund Amendments and Reauthorization Act (SARA) Title III List of Lists and for those Regulated Substances which are listed hazardous waste defined pursuant to 40 CFR Part 261, as amended, the threshold quantity shall be the reportable quantity published in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 40 CFR 302, Table 302.4 or the Superfund Amendments and Reauthorization Act (SARA) Section 355, Appendix A.

(b) For those Regulated Substances that are characteristic hazardous wastes defined pursuant to 40 CFR Part 261, as amended, the threshold quantity shall be based on the substance contained in the waste with the lowest threshold quantity.

(c) For those Regulated Substances not listed in the Superfund Amendments and

Reauthorization Act Title III List of Lists, and for those Regulated Substances that are not a hazardous waste, the following quantities of qualifying substances at a facility at any one time shall constitute a Threshold Quantity:

(i) Waste oil - 1000 pounds or 100 gallons.
(ii) Gasoline - 250 pounds or 25 gallons
(iii) Diesel/Jet Fuel/Kerosene - 500 pounds or 50 gallons
(iv) New Motor Oil - 2,000 pounds or 200 gallons

(d) For those substances that are mixtures of one or more Regulated Substance, the threshold quantity shall be based on the substance contained in the mixture with the lowest threshold quantity.

Threshold Quantities of substances may be established or revised by the Board, following public review and comment.

46. Underground Storage Tank (UST) - Any one or combination of tanks as defined in A.R.M. §16.45.803 (15) (1989) of the Montana Underground Storage Tank Regulations, as amended.

47. Vehicle Fueling Area - The area surrounding a fuel island or dispenser(s) subject to releases of petroleum products during vehicle fueling, including a 3 foot release collection buffer zone extending beyond the lanes of traffic next to the fuel islands or dispenser(s).

48. Waste Oil - Oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities.

49. Well - A structure, pit or hole sunk into the earth to reach a resource supply such as water.

50. Wellhead - The physical structure or device at the land surface surrounding a well, from or through which groundwater flows or is pumped from an aquifer.

Section 13.26.040 POLLUTION PREVENTION REQUIREMENTS

(A) Six months after the effective date of this Ordinance, no product shall be distributed, sold, offered, or exposed for sale within the aquifer protection area if it contains Perchloroethylene in any quantity. Those products containing Perchloroethylene used at dry cleaning establishments and educational institution research laboratories are exempt from this provision of the Ordinance, provided the person who owns, operates, or controls such facility obtains a pollution prevention permit from the Department, regardless of the quantity of Perchloroethylene handled at the facility.

(B) A person who owns, operates or controls a facility which handles Regulated Substances in an amount equal to or greater than the threshold quantities must submit an inventory and quantity of those Regulated Substances to the Local Emergency Planning Committee (LEPC) within one year of the effective date of this Ordinance, and every year thereafter.

(C) A person who owns, operates or controls a new or replacement fueling facility must:

(1) install and maintain an awning or canopy that prevents precipitation from falling on the vehicle fueling area(s); and

(2) design and install a storm water collection system for the facility which shall:

(a) prevent the flow of fuel releases in the tank fueling area and vehicle fueling area from discharging directly to a storm water injection well; and

(b) collect and discharge storm water from areas outside of the tank fueling area and vehicle fueling area to a grass infiltration swale or otherwise provide for such storm water to be handled in a manner to reduce the potential for water contamination.

The storm water collection design must be approved by the Department and permitted by the City of Missoula Engineering Department prior to facility construction. The person owning, operating, or controlling the facility must maintain any grass infiltration swale and any other approved device used to prevent releases in the vehicle and tank fueling areas from discharging to a storm water injection well. The facility shall keep records of maintenance of the device at the facility to be viewed during Department inspections.

(D) A person who owns, operates or controls an existing fueling facility where surface releases of fuel from the vehicle or tank fueling area may discharge to a storm water injection well shall make the following physical and procedural changes at the facility by December 31, 1998:

(1) breakaway hoses and nozzles shall be installed on all dispensers;

(2) emergency response equipment shall be kept on site to be used in the event of a release, including absorbent materials and spill containment covers for each storm water injection well which may receive discharge from a surface release; and

(3) an employee trained on how to respond to a release must be on site at all times during facility operation.

In addition to the above procedural and physical requirements, a person who owns, operates, or controls an existing fueling facility shall by December 31, 1996 incorporate a release prevention section within the pollution prevention plan required under section 13.26.050 (B) of this Ordinance. The release prevention section of the plan shall describe the steps or methods that will be taken to prevent fuel released at the tank and/or vehicle fueling areas from reaching a storm water injection well. The release prevention plan must be approved by the Department. Physical alterations or procedural changes required as a condition of the Department's approval must be completed or instituted within one year of the Department's approval.

(E) A facility that handles a total quantity of any Regulated Substance in an amount equal to or greater than four times its threshold quantity must obtain a Pollution Prevention Permit, pursuant to section 13.26.050 of this Ordinance.

(F) A person who owns, operates or controls a facility at which a Regulated Substance (excluding petroleum products in underground storage tanks, in vehicle fuel tanks, at bulk petroleum storage facilities, and Regulated Substances sold for retail in a container equal to or less than 5 gallons capacity) equal to or greater than the threshold quantity is handled on the effective date of this Ordinance shall provide secondary containment for that substance by January 1, 1996. A person who owns, operates, or controls a new facility at which a Regulated Substance (excluding petroleum products in underground storage tanks, in vehicle fuel tanks, at bulk petroleum storage facilities, and Regulated Substances sold for retail in a container equal to or less than 5 gallons capacity) equal to or greater than the threshold quantity is handled after the effective date of this Ordinance must obtain Department approval of their plan for secondary containment prior to obtaining a building permit or first handling a Regulated Substance in an amount equal to or greater than its threshold quantity, whichever occurs first.

(G) A person who owns, operates, or controls a facility at which a Regulated Substance equal to or greater than its threshold quantity is stored in any new or replacement underground storage tank system shall equip that system with double walled product piping, secondary containment of all ancillary equipment from the tank to the dispenser(s), tank release detection systems, and leak detectors on pressurized piping. Tank system design must be approved by the Department prior to obtaining a building permit. Such systems shall, at a minimum, meet the requirements described in A.R.M. §16.45.403 (1989) of the Montana Underground Storage Tank Regulations, as amended.

(H) After the effective date of this Ordinance, no person shall construct or operate an industrial commercial injection well at a new or existing facility unless said person obtains an Underground

Injection Control Permit from the Environmental Protection Agency (EPA) or the Department. A person may be granted a permit from the Department or EPA if the owner, operator or controller demonstrates to the Department or EPA that the process wastewater does not contain a Regulated Substance at a concentration equal to or above its EPA primary maximum contaminant level for drinking water, EPA health advisory level, or the standard proposed in the Montana Numeric Water Quality Standards, (Circular WQB-7), whichever is lower, and the potential for water contamination is reduced by such other measures as the Department or EPA may require.

(I) A person who owns, operates, or controls a bulk petroleum storage facility shall:

(1) During new or replacement construction, install all new or replacement piping aboveground;

(2) After the effective date of this Ordinance, perform annual release response training exercises simulating the actions that will be taken during a release of fuel at the facility;

(3) Within six months after the effective date of this Ordinance, have a person trained in the proper filling of aboveground tanks at the facility during tank filling operations, or establish a monitoring system capable of detecting and alerting local emergency personnel of a release during tank filling operations in such a manner to prevent the contamination of the Missoula Valley Aquifer. The monitoring system shall at a minimum include vapor monitors located at any valve and piping manifold that controls the flow of fuel to the tanks and from the tanks to the dispensers, and overfill alarms on any aboveground product fuel storage tank. The monitoring system must be staffed during tank filling operations. Any proposed monitoring system must be approved by the Department;

(4) Commencing on or before January 1, 1995, conduct annual integrity and leak testing of below grade metal fuel product piping to a pressure of one and a half times the operational pressure;

(5) On or before January 1, 1996, cathodically protect buried metal piping and the bottom of aboveground tanks in accordance with guidelines contained in American Petroleum Institute (API) 651;

(6) On or before January 1, 1996, and every five years thereafter, prepare a Contingency Plan outlining how personnel are to respond to a release of fuel at the facility. The plan shall also address alternative technologies which may prevent fuel from contaminating the Missoula Valley Aquifer, such as:

(a) installation of impermeable barriers or liners to prevent the vertical migration of released fuel to the aquifer;

(b) grading of the secondary containment area to common drainage channels or sumps equipped with dedicated pumps that can be activated to pump fuel from the containment area in the event of a large release;

(c) installation of vapor monitoring devices at piping manifolds and valves to alert personnel of a release;

(d) installation of vapor monitoring wells within a secondary containment area of the aboveground tanks to be used to recover released fuel before it reaches the underlying aquifer;

(e) installation of a dedicated recovery tank outside a secondary containment area of the aboveground tanks that can be used to recover released fuel; or

(e) excavation of contaminated soils immediately after a release occurs.

The Contingency Plan must be approved by the Department, and all physical or procedural changes required as a condition of the Department's approval of the Contingency Plan, shall be completed or instituted within two years of the Department's approval;

(7) On or before January 1, 1998, and every 10 years thereafter, test the integrity of the shell of each aboveground tank in accordance with American Petroleum Institute (API) 653;

(8) On or before January 1, 1998, install containment devices to prevent a surface release of fuel at the vehicle fueling area from discharging directly to a storm water injection well, or surface waters;
(9) On or before January 1, 2000, secondarily contain all aboveground piping manifolds; and
(10) On or before January 1, 2000, and every 10 years thereafter, test the integrity of the bottom of each aboveground tank in accordance with American Petroleum Institute (API) 653. The frequency of integrity testing of the bottom of each tank may be extended by the Department provided that the owner, operator, or controller of the bulk petroleum storage facility proposes an extended frequency in accordance with American Petroleum Institute (API) 653, the proposal is received by the Department within two years of the adoption of this Ordinance, and the Department approves of the change in frequency of testing.

(J) A person who owns, operates or controls a facility on which a public or private water well or monitoring well is abandoned after the effective date of this Ordinance shall ensure that the well is abandoned in compliance with the Montana Department of Natural Resources and Conservation Board of Water Well Contractor Regulations, ARM §36.21.669 through §36.21.679 and §36.21.810.

(K) After the effective date of this Ordinance, no person shall construct or operate a new or replacement facility which handles a Regulated Substance in a quantity equal to or greater than its threshold quantity within the Future Wellhead Reservation Area comprised of all land within township 13N, range 19W, sections 27 and 34, all land south of the Clark Fork River within township 13N, range 19W, section 22, and all land within the northwest and northeast quarter sections of township 13N, range 19W, section 4 of Montana Meridian, Missoula County, Missoula, Montana.

(L) Existing facilities within the Future Wellhead Reservation Area defined in section 13.26.050 (K) of this Ordinance may continue to operate, subject to all the conditions of section 13.26.050 and the following:

(1) Any activity involving the handling of a Regulated Substance in an amount equal to or greater than its threshold quantity shall be a noncomplying activity.
(2) Any noncomplying activity that is discontinued, abandoned or ceases for a period of twelve consecutive months may not be resumed.
(3) A noncomplying activity may not be enlarged, expanded, or altered so as to substantially increase the risk of soil or groundwater contamination. Any enlargement, expansion or increase in a noncomplying activity must be approved by the Department, in writing, prior to activity commencement.
(4) In the event a facility which houses a noncomplying activity is destroyed or damaged by any means to an extent that the cost to repair or replace the facility equals 50% of the value of the facility at the time of such act, the activity shall not be resumed or continued.

Section 13.26.050 POLLUTION PREVENTION PERMIT

(A) A person who owns, operates or controls a facility at which any Regulated Substance is handled in an amount equal to or greater than four times its threshold quantity shall apply for a Pollution Prevention Permit from the Department by the later of (a) July 1, 1995, or (b) 60 days after the date on which the facility first handled a Regulated Substance in an amount equal to or greater than four times its threshold quantity. New or replacement facilities which will handle a Regulated Substance in an amount equal to or greater than four times its threshold quantity shall obtain a pollution prevention permit prior to obtaining a building permit, facility construction or operation. The Department may order revisions in the permit application submitted by the regulated facility to be completed within 30 days of receipt of an administrative order issued pursuant to 13.26.120 of this Ordinance.

(B) In order to obtain a Pollution Prevention Permit, an application for the permit accompanied by a Pollution Prevention Plan shall be submitted to the Department for approval. The Department shall supply a form that can be used for the plan. If a facility is required by State or Federal law to prepare a Pollution Prevention or Release Prevention Plan, a copy of such plan, supplemented with such other information as required by this Section, shall suffice to meet the Pollution Prevention Plan requirement of this section. The Pollution Prevention Plan shall contain the following:

(1) A discussion of the risks posed by major water quality hazards at the facility and the steps taken to address each of those risks, including but not limited to:

(a) the quantity and toxicity of any Regulated Substance handled in an amount equal to or greater than four times its threshold quantity

(b) potential consequences of any release

(c) location of facility with respect to a water body, groundwater, and conduits to groundwater

(d) personnel training

(e) engineering controls

(f) emergency response plans

(g) preventative maintenance

(h) process safety

(i) management structure implemented to control the risks and hazards

(2) A description of (a) emergency equipment available at the facility to respond to a release of a Regulated Substance, (b) written procedures describing how such equipment will be inspected and maintained, and (c) procedures to control, mitigate and/or remediate any release of Regulated Substance.

(3) For each Regulated Substance that is handled in an amount equal to or greater than four times its threshold quantity at the facility, the Pollution Prevention Plan shall describe:

(a) The state (solid, liquid or gas), quantity and type of container in which each Regulated Substance is acquired by the facility;

(b) Available alternatives, if any, by which the facility could:

(i) Reduce the quantity of Regulated Substances handled by process changes, product substitution, reuse or recycling , or treatment that does not constitute disposal; and

(ii) Adopt handling practices or make site improvements to reduce the potential for contamination.

(c) The manner and conditions under which each Regulated Substance is stored and transferred prior to use or disposition;

(d) The manner and conditions under which each Regulated Substance is used at the facility;

(e) The manner and process by which any waste Regulated Substances are treated, recycled or disposed;

(f) The physical structures and/or operational procedures employed at the facility to meet the secondary containment requirements of this Ordinance.

(g) The procedures to be employed to ensure that Regulated Substances over the threshold quantity do not release or otherwise cause contamination during transportation, transfer, use, storage, and disposal.

(4) Building plans and site development drawings showing compliance with the secondary containment requirements of this Ordinance. Such plans shall show the pathway of a potential release of a Regulated Substance, including but not limited to, information on the location of sewer manholes, injection wells, drainage ditches, nearby streams, rivers or irrigation ditches and the direction of surface drainage. Such plans shall provide confirmation that the secondary containment methods are compatible with the materials to be contained and that Regulated Substances are isolated from injection wells, floor drains, surface waters, and any other surface water or groundwater injection point. The Department may require the plans to be

reviewed by a professional engineer if the secondary containment structures require substantial engineering design. The building or site plans must show the location of Regulated Substances in buildings or other designated site areas.

(5) Identification of the individual(s) or staff position responsible for monitoring releases and threatened releases and a description of the steps to be taken in the event of a release, including but not limited to, reporting the release to the Department, Missoula 9-1-1 dispatch, the City Fire Department, Rural Fire Department, National Response Center and any other entity required by law. The Plan should identify the skill and knowledge of the person or position responsible for actions in the event of a spill.

(C) The Pollution Prevention Permit shall be valid for a period of two years. The applicant must apply for permit renewal at least 60 days prior to permit expiration.

(D) To obtain a Pollution Prevention Permit from the Department the applicant shall pay an application fee in an amount determined by the Board.

(E) The Department shall issue a Pollution Prevention Permit within 30 days of determining that the applicant has submitted a complete and accurate permit application and the pollution prevention plan complies with the requirements of this Ordinance. The Department may require a facility inspection to ensure compliance with the requirements of this Ordinance before a permit is issued.

Section 13.26.060 FACILITY CLOSURE PERMIT

(A) After the effective date of this Ordinance, any person that is required to have a Pollution Prevention Permit by this Ordinance must obtain a facility Closure Permit as required by this section. Applications for a Closure Permit shall be filed with the Department no later than 30 days after (1) the facility owned, operated, or controlled by said person is permanently closed, or (2) the date on which the facility has been abandoned for one year. If a person is required by State or Federal law to obtain a closure permit, a copy of such permit, supplemented with such other information as may be required by this section, shall suffice to meet the facility closure permit requirement of this section. All applications shall include:

(1) A Closure Permit Application Form, supplied by the Department.

(2) A written record identifying the Regulated Substances and quantities at the facility on the date on which the facility permanently closed or was abandoned, and a description of the Regulated Substances removed from the facility before or at the time the facility permanently closed or was abandoned.

(3) If the facility has underground sumps, injection wells, underground tanks, or any other structure that may have contained or become contaminated with Regulated Substances, the application shall include a plan to collect samples to assess whether contaminants are present near the structure. The Department shall assist the applicant in complying with this requirement.

(4) Results of any soil or groundwater samples collected on site.

(5) Such other information as the Department may require which is relevant to the environmental condition of the facility.

(B) If the Closure Permit application and required submittals are not complete, the Department shall notify the applicant in writing of the deficiencies and the applicant shall have 45 days to cure the deficiencies.

(C) The Department shall issue a Closure Permit within 30 days of finding that the Closure Permit Application Form is accurate and complete and all appropriate copies of sample analyses have been submitted to the Department showing that the facility has complied with this section.

Section 13.26.070 REPORTING OF RELEASES

(A) A person who owns, operates or controls a facility or a person responsible for a release must immediately report a release of a Regulated Substance to the Missoula 9-1-1 Center by telephone in the following cases:

(1) A release of petroleum in an amount greater than 25 gallons.

(2) A release of a Regulated Substance other than petroleum in a quantity which exceeds the lesser of the threshold quantity of this Ordinance or the reportable quantity under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended.

(B) Exemption from the requirement to report a release is not intended to relieve, in whole or in part, a person's responsibility to remediate or eliminate contamination caused by a release, as may be required by this Ordinance or any other state, federal or local law or regulation.

Section 13.26.080 PROHIBITED ACTIVITY

It is unlawful for any person to:

(a) cause contamination or to place, cause to be placed, or allow to remain in place any substance in a location where it is likely to cause contamination;

(b) violate any provision set forth in a permit for the facility issued pursuant to this Ordinance;

(c) violate any order issued pursuant to this Ordinance; or

(d) violate any provision of this Ordinance.

Section 13.26.090 PROTECTION OF WATER SUPPLY WELLS

(A) New water supply wells installed after the effective date of this Ordinance shall comply with the following:

(1) New and replacement public and private water supply wells must be installed within design standards established by the Montana Administrative Rules, A.R.M. §36.21.670 through A.R.M. §36.21.679 and A.R.M. §16.20.401.

(2) Wells of new community and non-community non-transient water systems may not be constructed:

(a) Within 1000 feet of any hazardous waste management facility, Class II landfill, bulk petroleum storage facility, fuel pipeline, fueling facility not meeting the design standards of section 13.26.040 (C) or (D) of this Ordinance, chemical manufacturing facility, regulated substance tank not meeting the requirements of section 13.26.040 (G) of this Ordinance, and any site where a release to groundwater has been reported to a state or federal agency.

(b) Within 250 feet of a Class III landfill, railroad track, the edge of pavement of the principal north-south or east-west hazardous substance transportation routes, or the subsurface discharge point of a public sewage disposal system.

(c) Within 100 feet of a sewer lift station serving a publicly-owned or public sewage system, storm water injection well, or wastewater absorption system, as defined in the Missoula City-County Health Board, Regulation No. 1.

(d) Within 50 feet of any sewer main or unlined irrigation ditch.

The siting requirements of subsection 13.26.090 (A)(2), may be waived by the Department if it is demonstrated to the Department through scientific and technical evidence that the proposed location of a new well is the only practical site available and the potential for contamination to the well or groundwater is reduced by such other measures as the Department may require.

(B) After the effective date of this Ordinance, no person shall construct or operate a new:

(1) Hazardous waste management facility, Class II landfill, bulk petroleum storage facility, chemical manufacturing facility, fuel pipeline, fueling facility not meeting the design standards of section 13.26.040 (C) or (D) of this Ordinance, or a regulated substance tank not meeting the requirements of section 13.26.040 (G) of this Ordinance within 1000 feet of a community or non-transient non-community public water supply well.

(2) Class III landfill, railroad track, or the discharge point of a public sewage disposal system within 250 feet of a community or non-transient non-community public water supply well.

(3) Publicly-owned or public sewage system sewer lift station or wastewater absorption system, as defined in the Missoula City-County Health Board Regulation No. 1 within 100 feet of a community or non-transient non-community public water supply well.

(4) Sewer main or storm water injection well within 50 feet of a community or non-transient non-community public water supply well.

(C) No person shall install a new public water supply well or system if a water main which is part of an existing public water supply system regulated by the Montana Public Service Commission, or which is owned or operated by a county or consolidated city and county water or sewer district as defined in Title 7, chapter 13, parts 22 and 23, is located within 1000 feet of any property to be served by the proposed new public water supply system, and the owner of the existing public water supply system approves of the connection.

(D) No person shall install a new private drinking water supply well if the primary structure located on the property is situated within 200 feet of a water main which is part of an existing public water supply system regulated by the Montana Public Service Commission, or which is owned or operated by a county or consolidated city and county water or sewer district as defined in Title 7, chapter 13, parts 22 and 23, the property abuts the right-of-way in which the main is located, and the owner of the existing public water supply system approves of the connection.

(E) If a property within the aquifer protection area is part of a proposed division of land or phased division of land of 10 or more parcels, in which the overall density of the division of land is less than 5 acres per parcel, the person proposing the development shall provide for a public water supply system, as defined in A.R.M. §16.20.202(31), such that the quality of water provided to the families or persons meets the requirements of the federal Safe Drinking Water Act.

(F) U.S. Highway 93 and Interstate Highway 90 shall serve as the principal North-South and East-West hazardous substance transportation routes in the Missoula Valley. The City of Missoula shall provide adequate signing to indicate location of the routes to persons who transport hazardous substances through the valley.

Section 13.26.100 VARIANCES

(A) Purpose: Variances provide limited flexibility from strict compliance with specific Ordinance requirements.

(B) Applicability: When a person believes he or she meets the criteria for a variance set forth in subsection (D) below, such person may apply for Board approval of a variance following the procedure in subsection (F).

(C) Fees: The Board shall establish a fair and reasonable variance application fee based on the cost to give notice of hearing and investigate the proposed variance. The application fee must be paid in full before a variance will be considered. Application fees are not refundable. The Board may approve changes in fees at regularly scheduled board meetings.

(D) Criteria for Variances: The Board may approve of a variance to strict compliance with specific Ordinance requirements only if it finds all of the following:

(1) The applicant is subject to special circumstances which are:

(a) peculiar to the applicant's facility or situation; and

(b) not caused by the applicant's actions or inaction; and

(2) Substantial undue hardship would result from requiring strict compliance with the requirements(s) from which the variance is sought by:

(a) creating an unreasonable financial burden on the applicant; and

(b) depriving the applicant of rights commonly enjoyed by other persons similarly situated under the terms of the Ordinance.

(3) The variance must prevent aquifer and public water supply contamination and protect public health, safety and welfare to an extent similar to the requirements(s) from which the variance is sought.

(E) Variance Restrictions:

(1) The Board may not approve a variance which may adversely affect the health, safety, or welfare of any individual.

(2) No variance granted shall be construed to relieve an applicant of its obligations under other provisions of this Ordinance, or under other local, state, and federal laws.

(3) Variances are non-transferable and apply only to the applicant to whom they are granted for the period stipulated by the Board.

(F) Variance Approval Procedure:

(1) A complete variance application shall be submitted to the Department, including:

(a) Applicant's name and address

(b) Specific provision(s) of the Ordinance from which the variance is requested.

(c) Legal description or address where alternative is requested.

(d) Detailed and accurate description of the proposed alternative under consideration.

(e) Written explanation addressing each criteria under section 13.26.100 (D) (1)-(3).

(f) Other relevant information which the Department may require which is obtainable by the applicant.

(2) The Department shall have 7 days to determine if an application is complete.

(3) If the Department determines that the application is not complete, it shall notify the applicant of the deficiencies.

(4) If the Department determines that the application is complete, the Board shall schedule a public hearing within 45 days of the Department's determination.

(5) The Department shall serve notice of the hearing to the applicant's last known address by personal service or certified mail at least 14 days before the hearing is scheduled. The Department shall publish notice of hearing in a newspaper of general circulation in Missoula County at least 4 days before the hearing. Notice shall include:

(a) Name and address of applicant;

(b) Time, location and nature of hearing; and

(c) Address and phone number where interested persons may obtain information.

(G) Order of Hearings:

(1) Hearings shall proceed in the following order:

(a) First, the Board shall hear the staff report, if any, on the proposed variance.

(b) Second, the applicant shall present relevant evidence to the Board.

(c) Third, the Board shall hear any person in support of or in opposition to the proposed variance and shall accept any related letters, documents, or materials.

(H) Disposition of Hearing and Continuances:

(1) The Board shall deny, approve, or approve with conditions an application for variance to specific requirements of this Ordinance.

(2) The Board shall inform the applicant of its decision in writing, along with reasons for approving, conditionally approving, or denying the variance, within 15 days of its decision.

(3) The Board may continue a hearing for a period not to exceed 45 days.

(4) A hearing may be continued for longer than 45 days only if circumstances require a longer period and both the Board and the applicant agree to a longer period.

(I) Appeals: Any person adversely affected by a variance decision of the Board may initiate judicial review.

Section 13.26.110 INSPECTIONS

(A) The Department is authorized to enter and inspect at reasonable hours (or at any time on evidence of a release), upon presentation of credentials with or without prior notice, all facilities within the Aquifer Protection Area which it reasonably believes may handle Regulated Substances, in order to determine that the provisions of this Ordinance are being followed.

(B) If a person with authority over a facility will not permit an inspection, the City Attorney's office may apply to the City Municipal Court for a search warrant, based on probable cause to issue a warrant to inspect, survey or examine the facility and the premises on which it is located for potential violations of this Ordinance or in the interest of public health, safety, and general welfare.

(C) If a facility appears vacant or abandoned, and the property owner cannot be readily contacted to obtain consent for an inspection, in the interest of public health, safety and general welfare an agent of the City may enter any open or unsecured portion of the facility to conduct an inspection.

(D) Agents of the City or Department shall be provided with official identification and will show their identification when making an inspection.

(E) Law enforcement officers shall assist in making inspections when the Department requests their assistance, when necessary to provide for safe access and entry to the facility and at such time that law enforcement assistance can be reasonably scheduled or when a clear hazard to public health, safety or welfare exists.

Section 13.26.120 ENFORCEMENT

(A) The Department shall have the power and authority to administer and enforce the provisions of this Ordinance.

(B) Whenever the Department has knowledge or evidence that a violation of this Ordinance has occurred, the Department may issue a written notice to be served personally or by certified mail on the alleged violator or its agent. This notice shall specify:

(1) the provision of this Ordinance or permit alleged to be violated;

(2) the facts alleged to constitute the violation; and

(3) any penalties sought to be assessed pursuant to section 13.26.130.

This notice may also include an order for corrective action, which shall specify as applicable:

(1) the specific nature of corrective action that the Department requires, which may include without limitation:

(a) investigation, sampling and analysis to confirm a release or contamination;

(b) containment, removal and remedial action to abate and reduce contamination or

the threat of contamination;

(c) the submission of a corrective action plan and corrective action progress reports or any other information deemed appropriate to protect human health and the environment; and

(2) the time within which the corrective action is to be implemented.

The order for corrective action shall become final unless, within ten (10) days after the notice and order is received, the person named requests in writing a hearing before the Board. Upon receipt of the request, the Board shall schedule a hearing to be held not more than 45 days after the receipt of the request. If the person who owns, operates or controls the facility fails to comply with investigation or sampling required in an order issued pursuant to this section, the Department may conduct said investigation or sampling and the person so ordered shall be responsible for paying for Department staff time, analytical costs, and any incidental costs associated with the investigation and/or sampling. Failure of said person to pay the Department staff time or analytical costs shall be a violation of this Ordinance.

(C) If, after a hearing held pursuant to this section, the Board finds that violations have occurred, it shall either affirm or modify the previously issued order. If, after the hearing the Board finds that no violation has occurred, it shall rescind the previously issued order.

(D) Instead of issuing the order provided for in subsection (B), the Department may either:

(1) require the alleged violator to appear before the Board for a hearing at a time and place specified in the notice and answer the charges complained of; or

(2) initiate any other action authorized by this Ordinance.

(E) In connection with a Board hearing held under this Chapter, the Board may and on application by a person shall, compel the attendance of witnesses and the production of evidence on behalf of the persons.

(F) A person aggrieved by an order of the Board may within fourteen (14) days apply for rehearing upon only one or more of the following grounds:

(1) the Board acted without or in excess of its powers;

(2) the order was procured by fraud;

(3) the order is contrary to the evidence;

(4) the applicant has discovered new evidence, material to him/her, which he/she could not with reasonable diligence have discovered and produced at the hearing;

(5) competent evidence was excluded to the prejudice of the applicant.

(G) Within thirty (30) calendar days after the decision, or in the case of rehearing within (30) calendar days of the rehearing, a party aggrieved thereby may appeal to the municipal court.

(H) The municipal court shall hear and decide the cause upon the record of the Board. The court shall determine whether or not the Board properly exercised its authority, whether or not the findings of the Board were supported by substantial competent evidence, and whether or not the Board made errors of law prejudicial to the appellant.

(I) Either the Board or the person aggrieved may appeal from the decision of the municipal court to the supreme court.

Section 13.26.130 CRIMINAL PENALTIES

(A) Any person who violates any of the provisions of this Ordinance, or any order made pursuant to this Ordinance, shall be guilty of a misdemeanor and subject, upon conviction thereof, to a fine not to

exceed five hundred dollars ($500) or by imprisonment in the County jail not to exceed sixty days, or by both such fine and imprisonment. Each day a violation exists shall constitute a separate offense.

(B) Action under this section shall not be a bar to enforcement of this Ordinance or orders made pursuant thereto, by injunction or other appropriate remedy. The Board or the Department may institute and maintain any and all enforcement proceedings.

(C) All fines collected shall be deposited in the City General Fund.

(D) Pollution prevention efforts made by the violator, the economic benefit of not complying with any section of the Ordinance, and the gravity of the offense shall be considered in determining penalties for violations of this Ordinance.

(E) The City of Missoula may not enter into a vendor or construction contract, grant, or loan with any person who has been convicted of an offense under this Ordinance. This prohibition shall:

(1) continue for a period of 1 year following the date of conviction, and more than one year if said person does not correct the conditions giving rise to the conviction; and;
(2) affect each facility owned or operated by the person.

(F) Notwithstanding any other provision of law, the municipal court may also order that the offender take action to enhance public health or the environment by restoring or otherwise improving the quality of the Missoula Valley Aquifer in a manner consistent with public health, safety, and general welfare and this provisions of this Ordinance.

Section 13.26.140 INJUNCTIVE RELIEF

If a person continues to operate a facility or engage in an activity in violation of the provisions of this Ordinance, then the Board or the Department may file an action for injunctive relief in the District Court or in the City Municipal Court if the City Municipal Court has jurisdiction and authority to do so.

Section 13.26.150 SEVERABILITY

If any section, subsection, sentence, clause, phrase or word of this Ordinance is for any reason held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining portions of this Ordinance. The Council hereby declares that it would have passed the Ordinance and each section, subsection, sentence, clause, phrase, and words thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, phrases or words have been declared invalid or unconstitutional, and if for any reason this Ordinance should be declared invalid or unconstitutional, then the remaining Ordinance provisions will be in full force and effect.

Codification Instructions - This Ordinance shall be codified as Chapter 13.26 Missoula Municipal Code, Sections 13.26.010 through 13.26.150.

Milltown Technical Assistance Committee
P.O. Box 9086
Missoula, MT 59807

March 23, 1995

ADMINISTRATIVE RECORD

RECEIVED
MAR 2 4 1995
NATURAL RESOURCE
DAMAGE PROGRAM

Natural Resource Damage Litigation Program
State of Montana/Department of Justice
P.O. Box 201425
Old Livestock Building
1310 East Lockery Avenue
Helena, MT 59620-1425

Dear Sir/Madam:

The Milltown Technical Assistance Committee (MTAC) has reviewed the *Restoration Determination Plan for the Upper Clark Fork River Basin* (RDP, Version: January 13, 1995). With particular emphasis on Chapter 10, "Milltown Groundwater Resources", we offer the following comments for your consideration in the preparation of the final version of the RDP.

The first point that MTAC wishes to convey is that the State-chosen No Action Alternative (NAA, and known as Alternative 10D in the RDP) is unacceptable. More precisely, MTAC finds the NAA, with its reliance on extreme-long-term natural recovery and a limited monitoring arrangement, to be both contrary to the spirit and intent of the Superfund process and insufficient for protecting the health and safety of the residents of Milltown and Missoula County. Furthermore, the State's evaluation of the sediment/dam removal alternatives (10A, 10B, and 10C) is wholly inadequate, lacks a coherent use of established selection methodologies, and needs to be reconsidered.

With respect to the Superfund process, let us quote directly from the RDP. On pages 1-3 and 1-4, the RDP states that "CERCLA makes clear that the purpose of the natural resource damage provisions is to restore injured resources" and that "... in fashioning the natural resource damage provisions Congress intended to effect a make whole remedy of complete restoration." Although the State "harbors no illusions" about obtaining complete restoration to baseline "given the type and pervasiveness of contamination and the magnitude of the injuries", the State does acknowledge a requirement for "substantial recovery" (see page 1-5). In so doing, the State clearly declares on page 1-5, "... that the extent of injury and inability of human beings to fully redress the injury do not, by themselves, justify no action." Furthermore, on page 1-7, the RDP states "...that a trustee is to consider a reasonable number of methodologies or alternatives that will restore the injured resources." To establish a list of alternatives, the State quotes on page 1-8 that "alternatives may be constructed out of four kinds of trustee actions. These are restoration, rehabilitation, replacement, and acquisition of the equivalent." Additionally, when selecting an alternative, the State must consider ten factors, and these are discussed on pages 1-8 through 1-10 and are repeated here for completeness:

1. Technical feasibility
2. Relationship of expected costs to expected benefits
3. Cost-effectiveness
4. Results of response actions
5. Potential for additional injury
6. Natural recovery
7. Ability of the resource to recover
8. Human health and safety
9. Federal, state, and tribal policies
10. Federal, state, and tribal laws

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It is clear to MTAC that the NAA does not fit into this Superfund picture. The reason is simple: The NAA depends solely on extreme-long-term natural recovery and limited monitoring, neither of which produces sufficient benefit relative to the high health and safety risks involved. More specifically, the NAA implicitly assumes that the arsenic plume is in a stable equilibrium environment and that this condition will persist for another 1000 years or so. This is ludicrous and it is outrageous that the State continues to back this position even in the face of sound arguments to the contrary.

For instance, it is generally agreed that the arsenic source material in the reservoir sediments was primarily entrained and deposited during the 1908 flood. Furthermore, there is also general agreement that this arsenic source has extended beyond the sediments into the adjoining alluvium by a geochemical process that is still not completely understood.[1] Consequently, it is reasonable to hypothesize that the reach of the arsenic source beyond the sediments (perhaps by as much as 500') was accomplished over a time scale of 84 years (the time from the 1908 flood to the latest measurements in 1992), and this translates into a source movement of about 6' per year. Over an 8 year span (the time span from the early well pore water measurements of 1983-84 to the latest measurements of 1990-92), the arsenic source front and plume would have moved about 50', a distance that is smaller than the average well separation distance as well as the spatial uncertainty in the models used to interpolate the plume boundaries. Considering also the low flow conditions over the last ten years, it is not surprising then that the analysis of data from this time frame does not show, on average, an appreciable expansion of the plume (and hence the source as well). However, it is possible that in the next 84 years, the source and plume will expand another 500' closer to Milltown's current water supply by moving along flowlines emanating from the SE portion of the plume. In fact, the increasing arsenic levels seen at wells 104, 105 and 906, which are first in line along the flowlines, may be indicative of this process.

Besides the time scale for source/plume expansion, there is the time scale for catastrophic events involving floods and/or earthquakes. Dam collapse may be a part of such a catastrophic event, but in either case, a major redistribution of the arsenic source material is very likely with a large increase in health and safety risks to people and the environment near and down gradient of the reservoir area. Over the next 1000 years, Missoula County will certainly be faced with such a scenario. The 1908 flood was on the order of a 250-year flood; consequently, we can expect a similar flood within the next 150 years or so. And as far as severe earthquakes are concerned, Montana is not immune as history will attest. With the Milltown Dam sitting on a fault, attempting to guarantee its structural integrity for the next 1000 years is foolhardy.

Summarizing our concerns, the NAA simply cannot guarantee the stability of the arsenic source/plume nor the containment of contaminants in a major catastrophic event. Furthermore, the NAA does not provide the means to manage these situations in the event that they occur, essentially forcing people to deal with the disaster after it happens rather than having safeguards in place beforehand.

Consequently, from the 10 factors listed above for evaluating an alternative, it is apparent that the NAA fails with respect to factors 2-8. For instance, it is not likely natural recovery will occur before a catastrophic event precipitates an uncontrolled release of contaminants. The stability of the source/plume is also still in question. Therefore, there is a high potential for additional injury

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[1]The arsenic source referred to here is the arsenic in solid form that makes up part of the pore wall structure. This arsenic is not to be confused with the arsenic dissolved in the pore water. The arsenic plume refers to the 50 µg/l concentration boundary of the dissolved arsenic. A similar boundary can be defined for the arsenic source, but in general, it will map into the arsenic plume shape along flowlines. The use of the word source refers to the ability of the solid arsenic material to dissolve into the pore water. However, the dissolved arsenic may also solidify on the pore walls through the process of adsorption. It is the transfer of arsenic mass between the pore wall and pore water that is the subject of geochemical uncertainty.

in the not-too-distant future, posing a high risk to human health and safety with a lack of ability for the resource to recover in a reasonable fashion. Current response actions have done little to restore the injured resources, and in terms of cost-effectiveness and the relationship of expected costs to expected benefits, it is far better to deal with the problem now while it is still reasonably under control, than to deal with it in a more costly situation later.

MTAC finds it interesting, if not contradictory, that in many of the other sites evaluated in the RDP, No Action Alternatives were dismissed because of the large amount of time to recovery. For example, on page 3-14 in the section entitled "Area One Groundwater and Surface Water Resources", the RDP reads "...with the prospects that these injuries would continue for thousands of years was dispositive." Equally contradictory is the use of costs as a basis for making a decision. For instance, the State chose the most expensive alternative for the Silver Bow Creek Aquatic and Riparian Resources (alternative 4A at $87.1 million) stating that "An expenditure of $80 million dollars to restore a resource that has been unavailable to the citizens of Montana for approximately 100 years and would remain unavailable for generations to come were restorations not undertaken is entirely justified." A similar statement could be made for the Milltown site and the cost is at most $25 million more (assuming that we endorse one of the other alternatives offered in the RDP).

On this issue of the NAA choice, MTAC would like to point out that the evaluation of a No Action Alternative is primarily for comparison purposes. It is included with Institutional Controls (ICs) to give a reference frame for judging the more serious alternatives. Only in the event that a reasonable alternative cannot be found, can ICs be chosen, and if this is not feasible, then a No Action Alternative may be implemented. This protocol is our interpretation of the Superfund intent and purpose. EPA suggests this same idea, although it remains to be seen if they will adhere to it, as the State quite obviously has not.

Given that MTAC will not accept a No Action Alternative for the people of Milltown and Missoula County, we strongly advise the State to reevaluate its decision and consider the following recommendations. MTAC advises that a set of Comprehensive Institutional Controls (CICs) be implemented as soon as possible. We establish the idea of CICs to distinguish them from the EPA's ICs. The main difference is that MTAC wants a very detailed description of the controls that will be put in place, who will run and police them, how long they are to be in effect, how often will they be reevaluated, where will they be implemented, etc.

MTAC is specifically looking for two items in these CICs. First, we desire an available alternative water source prepared for immediate hookup in the event that the present Milltown wells are contaminated. A few years ago, it was suggested that a water line from Missoula could provide this source. Another possibility is a well far removed from the Milltown area (perhaps east of Bonner). In any case, about $1-2 million should accomplish this goal of providing (including rights) an alternative water source for immediate use in the event of contamination of the present Milltown wells.

The second item to be included in the CICs is a monitoring system and program that will make very frequent temporal and spatial measurements along the North to East borders of the plume so as to provide an early warning system of the plume's movement. We estimate that $100,000 per year (not $45,000 as given in the NAA) is more appropriate for the task of more frequent and extensive measurements. MTAC will be involved with the process of selecting the well sites, but for discussion purposes, we presently suggest a combination of existing wells and new wells that are strategically placed near the plume border. Additionally, the monitoring would commence immediately and not 10 years from now as suggested in the NAA. For monitoring in years 1-50, we estimate a present worth (@7%) of about $1.3 million.

Combining the costs of the two CIC items above, we estimate a cost of roughly $3.3 million. To

this figure will need to be added the costs of governmental controls, occasional consulting, etc. A cost in the neighborhood of $4 million seems reasonable. We wish to emphasize though that the implementation of a CIC alternative is immediate and independent of Superfund activities upstream of Milltown. Moreover, the CIC alternative is to be considered in addition to a more elaborate restoration alternative, which we will address below.

Before we discuss the restoration alternatives, we wish to make one more point with respect to the NAA chosen by the State. It has been suggested by the State in an introductory report to the RDP that in the total damage claim against ARCO by the State, $300 million is for past and future compensable value damages. It has also been implied by the State that a proportion of this damage claim will be used at Milltown to somehow offset the ill-effects of the NAA decision. However, there is no written discussion of when, where, and how this money will be spent. MTAC feels that this must be clearly spelled out in the RDP (or its associated reports). Otherwise, MTAC feels that Milltown and Missoula County will never receive its share of these funds.

The CIC alternative discussed above only satisfies the immediate Milltown area. MTAC is still concerned with the health of county residents downstream and this presents our second major concern with the RDP. Namely, we feel very strongly that the CICs should be investigated in conjunction with other remediation alternatives (such as dam removal and/or sediment removal). This is exactly the type of investigation that EPA is now in the process of conducting with a decision due in late 1996, and MTAC very much endorses this process. However, it has been clearly stated publicly by the EPA, and MTAC agrees, that the State is undermining EPA's mandated responsibility for finding the best solution for Milltown and the County. We strongly suggest that the State exclude the Milltown site from the present settlement claim and ask the presiding judge to reschedule the Milltown site damage assessment, or to award the CIC alternative but leave open a claim for the final EPA-selected alternative.

The reason for this approach is very clear. As pointed out earlier, long term stability of the contaminated sediments is not likely. Even with CICs in place, the catastrophic redistribution of the reservoir sediments by a severe flood or an uncontrolled dam removal would cause immense contamination problems downstream. With the NAA decision, the State is effectively deciding in favor of short-term rather than long-term health and safety considerations.

The reasoning used in the RDP is that the major remediation alternatives (10A, 10B, and 10C) suffer from four drawbacks: 1) High cost; 2) Possible uncontrolled release of contaminants; 3) Possible recontamination of reservoir sediments; and 4) Low confidence in approval of dam removal. However, MTAC feels that the State's hesitation in pursuing these alternatives is unfounded. As stated earlier, the State had no problem selecting Alternative 4A at Silver Bow Creek for $87.1 million, and this amount is not significantly different from the three Milltown alternative estimates (In fact, Alternative 10C, sediment removal, costs less). As for possible uncontrolled release of contaminants, the State has not demonstrated through expert testimony that this is a cause for concern. It has been suggested to MTAC that uncontrolled release of contaminants will be minimal and certainly does not pose the same order of risk as does the catastrophic redistribution of the reservoir sediments. As for possible recontamination of reservoir sediments (under Alternatives 10B and 10C), the State has not explained the process by which this is to occur. Once the reservoir is filled with new and clean sediment, most of the additional sediment coming from upstream will simply pass through the dam. Furthermore, upstream measures will supposedly keep the sediments relatively contaminant free. The only conceivable manner to significantly recontaminate the sediment is with another major flood, which if anything suggests dam removal as the alternative of choice, not the NAA. Finally, the use of low confidence in dam removal approval as a significant reason to reject Alternative 10A is nonsense. FERC and MPC have not indicated any resistance to the idea of dam removal and

they have certainly been aware of the situation at Milltown for more than enough time to make their objections heard.

We would like to conclude by pointing out that regardless of the arguments for or against Alternatives 10A, 10B, and 10C, MTAC feels that they are very limited in scope relative to the current EPA alternatives. EPA has shown the value of combining various alternatives into new alternatives (e.g., ICs with sediment removal). We have recommended replacing ICs with CICs, but in any case, we believe the EPA process encourages innovative thinking and that the State should endorse this process at the Milltown Site over its current inverted and detrimental approach.

Thank you for your attention and consideration of our comments. If you have any questions, please feel free to contact us.

Sincerely,

Brian Sherry, President
Milltown Technical Assistance Committee

ADMINISTRATIVE RECORD

RECEIVED
MAR 27 1995
NATURAL RESOURCE
DAMAGE PROGRAM

Mary Kay Craig
715 W. Park St.
Butte, MT 59701
February 20, 1995

Natural Resource Damage Litigation Program
State of Montana/Department of Justice
P. O. Box 201425
Old Livestock Building
1310 East Lockey Avenue
Helena, MT 59620-1425

Re: Comments on Recommended Restoration Alternatives

Following are comments on the recommendations developed by the NRDA program to restore or replace natural resources lost by the people of Montana, especially by the Butte and southwest Montana community, due to mining and milling operations of the Anaconda Copper Mining Company and other firms which are now a part of the merged Atlantic Richfield Company.

An Affected Resident

I write as a citizen born and raised in Butte. I have closely followed Superfund cleanup activities in the Upper Clark Fork Basin for the past several years, both as representative of the Clark Fork - Pend Oreille Coalition (working to protect and restore water quality in the basin) and as a Board Member, currently Acting President, of the EPA grant-funded Citizens' Technical Environmental Committee (interpreting Superfund technicalities for residents). Through my childhood years and today I was and am affected by contamination created by the for-profit activities of ARCO company operations in this area. Perhaps mine are examples of the kinds of unhealthy impacts ARCO's companies created and allowed to go unabated -- a situation for which Montanans rely on your program to obtain meaningful relief:

> My grandfather (deceased before I was born) labored underground in Butte. With other miners of his era, he suffered extreme hardships and perhaps a shortened life from work that paid barely enough to feed a family. ARCO's inferences today that such people "benefited" from the Company's negligent management of contaminants is a stretch of the imagination and very offensive to me.
>
> While no-one can point with certainty to causes of cancer and other diseases that take decades to develop, Butte and Anaconda have had the highest per capita disease rates in the nation. Three separate studies cited in a paper submitted to the 1990 Clark Fork Symposium by Drs. Samuel Luoma and Johnnie Moore indicate highest in the nation incidence for all

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diseases, for heart disease and surprising lung disease statistics among residents of this headwaters which is polluted with mining company operational wastes. No recent epidemiological studies have been done to correlate disease of the past twenty years to environmental toxins in this area; yet, during that time, I have had cancer; my mother died of cancer; my father died after lung surgery; my brother who grew up with asthma is today on oxygen, forced to take early medical retirement. A sister and her friend who played at the Pole Plant have had cancer and the friend's mother died of cancer. Because of the ups and downs to mining families (e.g., strikes to obtain meager wage increases, closure of mines and smelter by ARCO), many of the families greatly injured by mining contamination moved away from Butte. Their disease and death statistics would now be attributed to Seattle, Spokane, Los Angeles and San Francisco, etc. areas. Thus, the real impact to human health from mining contamination at Butte and Anaconda may never be known.

As a child growing up two blocks from Silver Bow Creek, I was not permitted to play near there for it was and is today an industrial sewer carrying mine wastes from the Butte Hill over 140 miles downstream to the Milltown Dam. Living near a creek, we could not enjoy it in ways other children in the country have enjoyed living near such a resource. There were and are no fish in our creek; there were/are relatively few in the Clark Fork River, and these inedible. We were not allowed to picnic or fish near the Clark Fork River: it was called "the wrong river" when we begged a break from a car trip.

Need for Restoration

Because of environmental and human health contaminants, mining landscape eyesores of the area, and the stranglehold Anaconda-ARCO has had on the Montana Legislature, new industry has not come to Butte. The result is that young people, including myself, had to leave Butte obtain employment elsewhere. Health related fears have caused Butte to lose out on some excellent medical and other professionals who refused to move here. Because of the contamination stigma effectively keeping new industry out, we continue to lack diversity of employment opportunity and the accompanying wages, growth and tax base enjoyed by nearby Montana cities. Our aquifers are so contaminated that industry needing clean water cannot consider Butte a potential site. With water in short supply in the headwaters, ARCO has won Superfund decisions that will tie-up tens of billions of gallons of additional water in a toxic state for perpetuity. Where

ARCO has co-opted public energy in Butte in order to decrease its cleanup costs, making NRD program efforts doubly important. Because of ARCO monetary muscle (contracting with

Butte-Silver Bow County, Montana Tech, the University of Montana, MSE, and many local firms; providing grants to area organizations and educational facilities; underwriting scholarships to local engineering students; advertising heavily in this small rural area, etc.), most citizens can't/won't cry out. The result is that Superfund "cleanup" is a misnomer. It has become a (mostly) cosmetic cover-up, utilizing management of people and contaminants in perpetuity rather than hands-off permanence. Without restoration work through the NRD program, Butte may continue to stagnate economically; it hasn't much future without a good cleansing of ARCO's toxics from the past.

Specific Comments on Alternatives

1. Butte Hill Groundwater Resources:

A. Domestic use is not the only water use injured. Addressing only "domestic" water use with replacement of 10 mgd, the remedy does not appear to consider water needs for potential "industrial" growth, an option that would be more available to the community had ARCO not destroyed the aquifers. The alternative could condone allowing Butte to stagnate economically while nearby cities and towns are able to attract water using industry. Should not a higher number of gallons per day be recommended?

B. Could a new industry coming to Butte have the same confidence for a continuing water supply from an NRDP reservoir as they might from a known continuing source (e.g., water emanating from an NRDP treatment plant associated with the Berkeley Pit and Mine Flooding water?

C. Where will water for a new reservior come from? Some experts say there is not enough capturable water in the hills around Butte to supply another headwaters reservoir. If water is not yet captured to the extent possible, if such new water is available, does not the remedy preclude the right of the community to increase its water resources with a reservoir at some time in the future?

D. Only 5.6 billion gallons of water, 10% of what would be there in 2025, is the amount engineers determine would naturally be held in the Berkeley Pit if mining had not occurred. Therefore, you should not be held to the ARCO arguments that the water is reaching its "natural level." Please consider pumping and treating Berkeley Pit and Mine Flooding water for use as replacement for the Butte Hill contaminated aquifer.

E. Your replacement alternative was unveiled in March, 1994. In April, 1994, nearly 4,000 residents signed a petition asking EPA to clean and discharge Berkeley Pit water immediately, to not wait 30 years as EPA remedy allows. Knowing now that this is the remedy of choice

of these folks and of the vast majority of those who wrote comment letters to EPA, including both the membership and Board of Directors of the Citizens` Technical Environmental Committee, perhaps NRDP can reconsider restoration of groundwater rather than replacement. Restoration (vs. replacement) may eliminate concerns that the "same water" is being considered in your alternative as is already in use; it would give back what has been taken; it would truly show care for the views of affected residents over those of PRP's, including the Butte-Silver Bow government PRP.

F. Perhaps your alternative should simply be to provide the initial funding for restoration of Butte Hill groundwater. NRDP funds won could go toward development today of technologies for eliminating waste sludges; perhaps some funds could go toward building a pumping plant today, (such a facility is not reliant on the technology to be employed in cleaning the water).

G. I support your view that the best, "A" type of alternative should be employed given the tremendous loss.

2. Montana Pole Treatment Plant

A. I support your recommended alternative, especially to remove contamination beneath the highway overpass.

B. I believe restoration should allow future generations to utilize land for any purpose. Butte-Silver Bow government had downgraded zoning at the Pole Plant from a residential provision to industrial with the result that ARCO is not required to clean up well enough to meet residential mcl's or mclg's for groundwater. Will your alternative allow residential use?

3. Rocker Arsenic Plume

A. As this is a relatively small area of contamination and it is a potentially high-growth extension of the urban area, I believe the best possible alternative should be undertaken. I support your alternative "A" and disagree that "B" is adequate.

4. Silver Bow Creek

A. I strongly support your "A" alternative, believing that mine waste in the floodplain is not acceptable. I do not believe STARS is an acceptable permanent remedy in a floodplain. The floodplain area to be restored should be widened above the Warm Springs Ponds to at least a 150 year flood plain because of the fact that the Ponds are only designed to manage a 100 year flood and contaminants from a wider flood would spill into the Clark Fork River. It is extremely important that you stick with the removal of ediments from the creek bottom in order to assure future

residents of the ability to enjoy a self-reproducing fishery in Silver Bow Creek.

5. Upland Area Resources
   A. Please assure funds are available in perpetuity for rebuilding a repository for Beryllium, etc. if and when this becomes necessary. I do not recall having seen a provision for this in the Superfund cleanup.

6. Warm Springs Ponds
   A. The ponds are termed an "interim" remedy in the ROD. I suggest NRDP make some provision for the possibility of future removal of contaminants if and when it is found that the chosen remedy is not adequate.

7. Clark Fork River
   A. I support alternative "A" as means to assure a good fishery returns to the upper reaches of the Clark Fork River.

Over-all Comments

A. Given the relatively short history of civilization in this area and only 200 years of U.S. history, it is of utmost importance that you provide restoration wherever possible, rather than replacement, and that the wellbeing of future generations of residents, living in circumstances we cannot project, be protected from exposure to groundwater and surface soil contaminants. This requires truly permanent hands-off remedies be chosen. If such is not today technologically feasible, funds should be put aside to address those concerns when technology is available in the future.

   B. Having followed the NRDP program for nearly three years, I am aware of the fine skills, commitment and hard work of the staff of the NRDP. Their integrity and efforts, often vehemently opposed by ARCO, are greatly appreciated and will contribute to a healthy quality of life for future residents of Butte and southwest Montana.

Yours very truly,

Mary Kay Craig

Mary Kay Craig

THE
Clark Fork
Pend Oreille
COALITION

ADMINISTRATIVE RECORD

March 22, 1995

RECEIVED
MAR 2 4 1995
NATURAL RESOURCE
DAMAGE PROGRAM

Mr. Rob Collins
Natural Resource Damage Litigation Program
State of Montana/Department of Justice
P.O. Box 201425
Old Livestock Building
1310 East Lockey Avenue
Helena, MT 59620-1425

Dear Rob:

Thank you for the opportunity to comment on State of Montana's Natural Resource Damage Assessment for the Clark Fork River Basin NPL sites. The Coalition supports the state's ongoing effort to seek damages from ARCO to restore the injured aquatic and terrestrial ecosystems of the Clark Fork River.

Our comments will mainly focus on the state's Restoration Determination Plan, although we will provide some brief comments on the Introduction Report and the Compensable Damages Report.

Overall, we believe the state has provided a comprehensive analysis of the sources, volumes, and extent of contamination caused by the release mining and smelting wastes from the Butte and Anaconda area. We support the state's preferred restoration alternatives for many of the sites where streambeds and floodplains have been heavily contaminated by mine tailings and metal-enriched soils.

However, we do not support the state's plan to seek compensable damages rather than restoration costs for contaminated groundwater areas in the basin, most notably, in Milltown and Opportunity. We believe the No Action Alternative at these two sites fails to meet the Natural Resource Damage Program's fundamental goal of improving impacted ecosystems to the "baseline condition." For that reason, we urge the state to reconsider and modify its decision for the Milltown and Opportunity sites.

Enclosed are the Coalition's comments on the NRDA. Please call me if you have any questions.

Sincerely,

Geoffrey Smith
Staff Scientist

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406/542-0539

P.O. Box 4718
Butte, MT 59702
406/723-4061

P.O. Box 1096
Sandpoint, ID 83864
208/263-0347

Comments on the Introduction to Report of NRDA

The state's goal in the Natural Resource Damage Assessment (NRDA) is to restore damaged natural resources to "baseline conditions" because Superfund remedies, while being protective of public health, do not necessarily restore the injured resources. For the purposes of the state's analysis, the Coalition believes the state needs to do a better job describing the baseline conditions that are the foundation of the NRDA. At a minimum, the state must define some general parameters that it believes constitute baseline conditions, such as the plant, fish, and wildlife communities they expect the basin to support. Without defining these baseline conditions, it is difficult for the general public, and the state, to determine which alternatives have the best chance of achieving the restoration goals of the program.

The state is asking ARCO for $635,410,000 in damages and costs for injuries to natural resources in the Upper Clark Fork River Basin. This cost is based the assumption that certain resources, including groundwater in Anaconda and Milltown, will never be cleaned up. The Coalition wholly disagrees with this assumption. We believe the state should pursue restoration alternatives that are more consistent the fundamental goal of the Natural Resources Damage Program (NRDP), and that compensable damages should only be based on services lost while restoration activities are proceeding.

Comments on the Compensable Natural Resource Damage Determination

The Coalition believes the discussion of compensable damages needs to be expanded. The purpose of this section of the NRDA is to compensate "all or a portion of the service lost to the public for the time period from the discharge or release until the attainment of the restoration, rehabilitation, replacement, and /or acquisition of the equivalent of the resources and their services to baseline."

It is difficult to determine whether the amount of compensable damages sought is appropriate because of the "baseline condition" questions mentioned previously. Regardless, we urge the state to expand the discussion of how compensable damages will be spent. Specifically, we would like a more thorough explanation of where this money will be allocated and more importantly, a commitment to spend the money at the sites where damaged resources are not fully addressed by EPA Superfund remedies or the NRDP restoration actions.

Comments on the Restoration Determination Plan

The Coalition supports the state's goal of restoring the injured natural resources, and the services they provide to the public. We recognize that efforts to mitigate the impacts of hazardous and deleterious substances released during a century of mining, processing, and wood treating operations in the Upper Clark Fork basin will be difficult. This is especially true because, as the state properly noted, the mine tailings and toxic metals do not degrade and must be removed or otherwise isolated.

However, we do not agree with the state's assessment that some hazardous materials should be left in place to "heal naturally" without some effort to reduce the amount of contamination a site generates. The RDP recognizes the inability of human beings to fully redress the injury does not justify taking no action, and that actions that improve conditions of the resource and lead to substantial recovery will accelerate restoration, even if they do not return resources to their baseline conditions. In spite of that, the state's restoration alternatives for Butte, Anaconda, and Milltown seem to ignore these findings.

Our comments on the Restoration Determination Plan (RDP) will focus on the state-selected restoration alternative and whether or not we believe these alternatives satisfy the goals of the NRDP.

Butte Hill Groundwater Resources

The state has determined that acid mine drainage from historic mine shafts and tunnels has generated over 60 billion gallons of contaminated water in the Berkeley Pit. Concentrations of metals and other chemical constituents are "grossly in excess of drinking water standards." In addition, it estimates that a total of 327,000 acre-feet of water in the greater Butte Hill aquifer area will be lost if no further action is taken.

The state's restoration alternative—Alternative 2A—proposes to construct new or expanded reservoirs in the Butte area to replace the lost water. The reservoirs and water would be used as a source of domestic and or irrigation water in the Butte area, as well as for instream flows for fishery enhancement in Silver Bow Creek and in the Clark Fork River. It was unclear, however, whether the state chose not to seek restoration costs for pumping and treating the groundwater water because EPA and ARCO have determined it is "technologically impracticable" or because ARCO would be responsible to do that, eventually, under the EPA's ROD for the Butte Mine Flooding Operable Unit.

Although the Coalition supports the state's selected alternative, we urge the state to: (1) review the Technical Impracticability study referenced in the RDP and have your scientific experts evaluate its conclusions; (2) secure water rights for the 327,000 acre-feet of water that will supply the replacement reservoirs—the Upper Clark Fork River is already a grossly over-appropriated stream and it is highly unlikely that the 327,000 acre-feet will come from surface or groundwater supplies within the basin; (3) assure that money is allocated to cover the cost of transporting the water to Butte and distributing it to users if the replacement water is to come from outside the basin; (4) consider evaporative losses from the newly constructed reservoirs in calculations to determine the amount of water needed to replace Butte's lost water supplies.

Area One Ground and Surface Water

The state has determined that over 11,000 acre feet of groundwater have been damaged by the release of hazardous substances, including heavy metals arsenic and sulfate. Tailings and other mine related wastes have injured the alluvial aquifer across 562 acres at the Area One site. These releases, most of which are associated with sources at the Parrot Smelter, the Butte Reduction Works, and the Colorado Smelter, continue today and are likely to continue for thousands of years.

The state recommends a restoration alternative that: (1) excavates and disposes of tailings and other mine wastes, the primary sources of hazardous substances in ground and surface water; (2) constructs a groundwater interception trench parallel to the Metro Storm Drain and Silver Bow Creek to capture contaminated water; and (3) constructs a facility to treat the captured groundwater.

The Coalition supports the state's selected alternative. We agree that the cost of the remedy is justified because of the severity of injury to ground and surface water, and the likelihood that these injuries will continue for thousands of years if not remediated. We believe the state's preferred restoration alternative provides the best opportunity to restore the contaminated alluvial aquifer and to improve surface water quality in Silver Bow Creek and the Clark Fork River.

Silver Bow Creek Aquatic and Riparian Resources

The state has determined that aquatic and riparian resources of Silver Bow Creek have been injured by the release of hazardous substances. Surface water exceed aquatic life criteria, streambed sediments contain elevated levels of metals, macroinvertebrates numbers are down

and fish have been eliminated from Silver Bow Creek. In addition, a total of 1,304 acres have tailings and contaminated soils that are a source of metals to surface, groundwater, and the aquatic environment. Nearly 748 acres of floodplain having phytotoxic levels of contaminants that leave them devoid of vegetation and incapable of supporting wildlife.

The state recommends a restoration alternative that will excavate 1030 acres (2,832,000 cubic yards) of tailings and soils, excavating 22.6 miles (201,700 cubic yards) of the Silver Bow Creek stream channel, and backfill, reconstruct, and revegetate areas that have been excavated.

The Coalition supports the state's selected alternative. However, we urge the state and ARCO to coordinate restoration activities at the site so that Superfund and NRDP remedial activities do not undo one another. The state may even consider seeking Superfund cleanup costs and NRDP restoration costs for these sites at the same time. It will make for more practical coordination of on the ground activities, as well as probably saving ARCO some money.

The Montana Pole Site

The state has determined that wood treating fluids containing hazardous substances, including 1.1 million pounds of pentachlorphenol (PCP), PAH, BTEX, dioxins and furans, have contaminated 350 acre-feet of groundwater and 239,000 cubic yards of soil across 44 acres at the Montana Pole Site. Groundwater transport of these contaminants has resulted in injury to Silver Bow Creek as well.

The state recommends a restoration alternative that removes a significant source of contamination at the site. The alternative includes excavating and land treatment of contaminated soils, backfilling excavated areas, and pumping and treating contaminated groundwater at the site.

The Coalition agrees with most of state's preferred alternative 5B, but believes the 41,000 cubic yards of excavated soils should be disposed of off-site, RCRA-approved facility —as discussed in Alternative 5A—so that the rate of recovery towards baseline conditions is accelerated.

Rocker Groundwater and Soils Resources

The state has determined that organic compounds, metals, and metalloids have contaminated soils and groundwater at the Rocker site. Groundwater contaminants include arsenic, cadmium, copper, lead, zinc, iron, manganese, sulfate, and PAH's. These contaminants have resulted in plumes that exceed drinking water standards 191 acre-feet of groundwater across the 26 acre Rocker site. In addition, some 30,000 cubic yards of soil at the site are contaminated, predominantly by arsenic.

The state has selected a restoration alternative that will remove and dispose of contaminated soils and backfill the excavated areas. The Coalition supports the idea of removing the contaminated soils, but believes the pumping and treating of groundwater contemplated in Alternative 6A must occur to prevent residual groundwater contamination during and after soil excavation.

As the state noted, the Rocker area has become a vital part of the I-90 commercial/transportation corridor which is likely to grow in the future and require additional water supplies. Well drillers at the Town Pump site have discovered such a supply, a prolific lower aquifer in the Rocker area with some of the cleanest groundwater in the state. The Coalition believes this lower aquifer must be protected from the potential migration of contaminated water from the upper aquifer, and urges the state to select Alternative 6A for the Rocker site.

Smelter Hill Area Upland Resources

The state has determined that upland habitat areas on Smelter Hill, Stucky Ridge, and Mount Haggin have been injured by the emission, aerial transport, and deposition of hazardous substances from the Washoe (Anaconda) smelter. The soils, which cover over 11,000 acres, have concentrations of arsenic, cadmium, cadmium, copper, lead, and zinc that are phytotoxic and prevent establishment and maintenance of vegetation and wildlife habitat .

We believe the state's selection of Alternative 7A is appropriate.

Anaconda Area Resources

The state has determined that historic mining, smelting, and processing activities in Anaconda area have released hazardous substances to ground and surface waters contaminating over 400,000 acre-feet of groundwater over the 40 square mile study area. The state has estimated there are over a million cubic yards of wastes at the Old Works, that groundwater contamination at Smelter Hill extends to a depth of 200 feet, that Anaconda and Opportunity ponds hold approximately 243 million cubic yards of waste materials, and the Warm Springs Ponds about 19 million cubic yards. In addition to the groundwater injury, tailings at the Opportunity Ponds are phytotoxic and prevent establishment and maintenance of vegetation and wildlife habitat .

The state recommends the No Action Alternative for the site, with no restoration of groundwater resources or wildlife habitat expected for tens of thousands of years. The Coalition believes the state's preferred alternative is unacceptable because it discounts alternatives that will significantly reduce the migration of contamination from the site and move injured resources closer to baseline conditions. We realize none of the alternatives will return the resources to baseline conditions in the near future, but recommend the state select an alternative that at least reduces impacts to groundwater and surface streams in the Anaconda area, most notably to Warm Springs Creek and the Clark Fork River.

For this reason, the Coalition recommends the state select Alternative 8A. The state clearly indicates that capping the ponds will significantly reduce the amount of infiltration (by 50 to 97 percent) through the tailings and transport of contaminants to adjacent ground and surface water systems. While this option does not restore the resources to baseline, it will make large strides toward reducing the transport of contaminants offsite.

Clark Fork River Aquatic and Riparian Resources

The state has determined that aquatic and riparian resources of the Clark Fork River from Warm Springs Ponds to Milltown Reservoir have been injured by the hazardous substances arsenic, cadmium, copper, lead, and zinc released from mining and mineral processing operations in the Butte and Anaconda areas. An estimated 13,000 acres of floodplain and riparian areas have been contaminated, including over 215 acres that are phytotoxic, devoid of vegetation, and incapable of supporting wildlife. In addition, surface water and bed sediment contamination has significantly diminished macroinvertebrates and trout populations

The state recommends a restoration alternative that will excavate 2,791,000 cubic yards of tailings and soils over 4,500 acres. These materials will be disposed of in the Anaconda/Opportunity ponds and excavated areas will be partially backfilled and revegetated. Contaminated riverbanks between Warm Springs and Deer Lodge will be removed, reconstructed, and stabilized.

Although we support the state's selected alternative, we urge the state to: (1) develop criteria to determine which riverbanks will be excavated and reconstructed and which ones will be stabilized by revegetation; (2) coordinate this restoration activities with the Superfund remedial action, as mentioned in the Silver Bow Creek section; (3) coordinate restoration activities with the Department of Fish, Wildlife and Parks to assure that downstream impacts to water quality and fish habitat are minimized; (4) secure rights for the 50 cfs (6,150 acre-feet) of water needed for flow augmentation and contaminant dilution in the Clark Fork River.

Milltown Reservoir

The state has determined that the Milltown Reservoir contains over 6 million cubic yards of metal-sediments that contain approximately 2,100 tons of arsenic, 143,900 tons of iron, and 9,200 tons of manganese. The state estimates that between 16,910 and 110,990 acre feet of contaminated water, containing 19 tons of arsenic, 647 tons iron, and 1,250 tons of manganese, leaves the fine grained sediments and flows into the Milltown area *annually*. The state concludes that without effective source removal, the discharge of tens to hundreds of thousands of acre-feet of contaminated groundwater will persist from the Milltown Reservoir for hundreds to thousands of years.

The Coalition does not support the state's selection of the No Action Alternative for the following reasons:

1. This alternative fails to meet even the most basic goal of the NRDP, which is to restore damaged resources to their baseline conditions.

2. This alternative contradicts the positive steps upstream to remove sources of contamination and restore damaged resources.

3. The state did not provide a comprehensive analysis of the sediment removal option. No engineering analysis was presented that estimates the amount of metals that would be released or their potential impacts on surface water in the reservoir and downstream in the Clark Fork River. In addition, failure to conduct this analysis brings into question the state's cost estimate for this removal. Yet the state rejected the sediment removal option because of the relatively high costs and the degree of environmental risk associated with the action alternatives. We believe it is premature to discard the sediment removal option until the true environmental and economic costs of this alternative have been quantified and evaluated.

4. The state also failed to assess the potential for additional injury downstream under the No Action Alternative. The Missoula Sole Source Aquifer receives nearly 20% of its water from the Hellgate Canyon aquifer, which is directly impacted by contaminant migration from the Milltown Reservoir. The NRDP cites the potential for downstream injury as a reason not to remove the sediments, but fails to do address the potential downstream impacts of leaving them in place. If the potential for future injury is considered with the removal option, it should most certainly be considered if the contaminated sediments are to be left in placed for hundreds to thousands of years. This is especially true in light of the fact that the state recognizes the potential for significant impacts in the future in evaluating Alternatives at the Anaconda Site.

5. The state failed to assess viable restoration alternatives for the site, including: (1) a pump and treat system that focuses on the pore water itself, instead of the entire alluvial aquifer; (2) a sediment removal option that includes backfilling the excavated areas with clean material to prevent the redeposition of contaminated sediments from upstream; and (3) delaying the sediment removal until upstream activities have been completed. The NRDP claims time and again that various removal efforts upstream will significantly reduce the volume and extent of contaminated materials, yet they discount the sediment removal option because the reservoir and the alluvial aquifer may be recontaminated from upstream sources.

6. The state assumed that the arsenic plume is stable and poses no threat to the Milltown Water Users replacement well, yet provided inadequate information to verify this assumption In fact, the state's own specialists point out that arsenic concentrations appear to be increasing in some areas of the plume area, and that this increase may imply that geochemical mechanisms are not fully understood and insufficient time has passed to fully evaluate the final extent of metal migration in the alluvial aquifer.

7. The state has failed to demonstrate that Institutional Controls, such as well drilling restrictions, will adequately protect human health and the environment. In addition, it failed to get a commitment from the Missoula City/County government to implement and enforce Institution Controls.

8. The state has failed to consider provisions of the Missoula Aquifer Protection Ordinance which states that it is unlawful to leave wastes in a place where they will cause or are likely to cause contamination.

9. The state has provided no assurance that the Montana Power Company will relicense the Milltown Dam with Federal Energy Regulatory Commission.

In addition to these shortcomings in the evaluation of alternative, the No Action Alternative seems to contradict the rationale for decision-making used at other sites in the basin. Specifically, the Area One Ground and Surface Water Assessment concluded that "the severity of injury to ground and surface water combined with the prospects that these injuries would continue for thousands of years was dispositive, and that the No Action Alternative was unacceptable for this reason." Why is it acceptable here when the conditions appear to be the same?

The state also emphasizes the fact that the extent of injury and inability of human beings to fully redress the injury do not, by themselves, justify taking no action. Indeed, actions that improve the condition of the resource and lead to substantial recovery, even if not producing short-term restoration to baseline, will accelerate restoration.

In light of these observations, the Coalition recommends the state reconsider its selected alternative for the Milltown site. We strongly encourage the state to conduct a more thorough and detailed analysis of the sediment removal option in light of our previous comments. Regardless of the outcome, the state must select an alternative that will provide effective and permanent remediation of the groundwater contamination at the site. This restoration alternative should assure that the sediments and the contaminated water they generate are effectively contained within the Milltown Reservoir and that impacts to downgradient ground and surface water are eliminated. If the state is unable to develop alternatives that satisfy these criteria, it should select a sediment removal alternative.

In addition, we request that the state begin to address the fundamental needs of the Milltown Water Users Association. Specifically, any restoration alternative for the Milltown site must include provisions and compensation that: (1) assure that citizens in Milltown have a clean and reliable water supply for the future—the cost of infrastructure improvements are appropriate under the NRDP because they compensate lost services, and because water system upgrades were also considered at the Butte Hill Aquifer site; (2) increases the state's understanding of the stability, movement, and ultimate fate of the arsenic plume at Milltown—we recommend the state seek damages to finance an improved monitoring well network that will provide an early warning system of the plume's movement.

ADMINISTRATIVE RECORD

February 19, 1995

Rob Collins
Natural Resource Damage Litigation Program
P.O. Box 201425
Old Livestock Building
Helena, MT 59620

RECEIVED
FEB 23 1995
NATURAL RESOURCE
DAMAGE PROGRAM

Dear Mr. Collins:

More than a decade ago I was alarmed when investigators found arsenic in the wells of Milltown residents. They traced the source to the polluted mining sediments behind the Milltown Dam. I am even more alarmed now when a just-released study, the Hellgate Aquifer Study by the Atlantic Richfield Company (ARCO), reports that the contamination is moving downstream.

We have had no remediation of this proven source of poison. I urge you to advocate for the complete removal of these hazardous materials from behind the Milltown Dam.

Like many Montanans, I have followed the development of the largest Superfund site in the world, in the upper Clark Fork River Basin. Halfway cleanup measures in the drainage are the wrong way to go. The State of Montana should protect its citizens and oppose halfway clean-ups. Your department, Mr. Collins, should press ARCO to fully remove the contamination behind the dam just a mile upstream from Missoula.

I have lived in the Missoula Valley for 18 years and have spent a lot of time on the Clark Fork River fishing, walking, rafting, and canoeing. I own a house in Missoula downstream from the dam. I believe the Department of Justice should press ARCO to fully remove the sediments that a century of mining have deposited behind the Milltown Dam. Any other "solution" is not a solution, but a capitulation to ARCO and a perpetual danger to the people (and other creatures) downstream.

Wait until the Environmental Protection Agency has held public meetings to discuss clean-up options. Press ARCO to fully clean up the sediment behind the Milltown Dam. Extend your deadline to accept public comment.

Sincerely,

Jeffrey J. Smith
605 South 10th
Bozeman, MT 59715

ADMINISTRATIVE RECORD

L. F. Schombel
2200 Applewood Lane
Missoula, Montana 59801

RECEIVED
FEB 21 1995
NATURAL RESOURCE
DAMAGE PROGRAM

February 18, 1995

To NRDP:

I am a board member of the Milltown Technical Assistance Committee (MTAC), concerned about the decision to leave the sediments in place behind Milltown Dam. Some facts which may not have been considered in making the decision follow.

While the .050 mg/l isocon line in the arsenic plume has not shifted much in the last few years, there has been an increase in arsenic contamination in wells within the plume area between 1983-84 and 1990-92; in two cases the more recent sampling showed contamination to be 15 times as large (see enclosed table).

The edge of the plume is not precisely located because water samples were not taken at comparable levels in edge wells.

There is arsenic contamination above state standard in six wells in the Pinegrove area, approximately 4000 feet downstream from the dam. Sampling done in 1986 and again in 1988 showed an increase in arsenic contamination in every well that was resampled. No additional testing for arsenic has been reported since 1988.

A flood similar in size to the 1908 flood (see enclosure) will cause scouring and redeposition of sediments on the floodplain downstream from Hellgate Canyon, with potential damage to the Missoula aquifer. An example of this type of damage may be in the area around a monitor well located about half a mile west of the Reserve Street bridge. This well is in an abandoned river channel shown on air photos. Water samples from the well have arsenic content as high as .079 mg/l. Source of the arsenic most likely is from redeposited sediment in the channel, scoured during the 1908 flood or possibly deposited before the dam was built.

L. F. Schombel

Enc.

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Table 5-10

Comparison of Arsenic Concentrations
Alluvial Aquifer/Bedrock Wells
1983 - 1992
Milltown Reservoir Site

ARSENIC PLUME AREA

Well No.	Dissolved Arsenic Concentrations (mg/l)	
	Woessner (1983 - 1984) (a)	ENSR (1990 - 1992) (b)
M-17	<0.003	0.043 - 0.207
100A (c)	0.023 - 0.080	1.01 - 1.26
100B	0.412	1.26 - 1.5
101B	0.634 - 0.884	0.941 - 1.07
102A	0.216 - 0.631	0.805 - 0.874
102B	0.800 - 1.10	0.806 - 1.07
103A	<0.003 - 0.0200	0.0426
103B	<0.003 - 0.0390	0.0424 - 0.0579
107B (c)	<0.003 - 0.509	<0.003 - 0.0048
107C	0.023 - 0.766	0.331 - 1.45

NORTHERN HYDRAULIC BOUNDARY AREA

Well No.	Dissolved Arsenic Concentrations (mg/l)	
	Woessner (1983 - 1984) (a)	ENSR (1990 - 1992) (b)
99A	<0.003	<0.003
99B	<0.003	<0.003
104A (c)	<0.003 - 0.0060	0.0076 - 0.0087
104B	<0.003 - 0.0163	0.0110 - 0.0116
105A	<0.003	<0.003 - 0.0077
105B	<0.003	<0.003 - 0.0035
105C	<0.003	<0.003
106A	<0.003	<0.003
106B	<0.003	<0.003
106C	<0.003	<0.003
108A	<0.003	<0.003
108B	<0.003 - 0.025	<0.003
109A	<0.003	<0.003
109B	<0.003	< 0.003 - 0.004

•MTAC NEWS•

MILLTOWN TECHNICAL ASSISTANCE COMMITTEE

P. O. BOX 9086, MISSOULA, MT 59807 • 258-6244 •

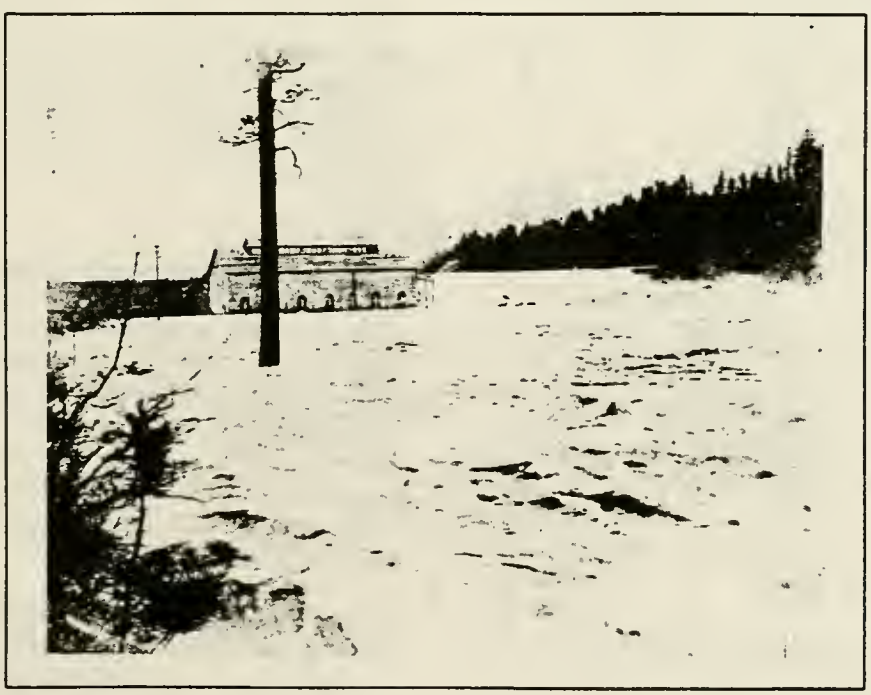
AUGUST 1994

Floods On the Clark Fork River

by
Steve Blodgett and Len Schombel

Over the past 25 years western Montana has been in a prolonged drought, although the summer of 1993 was very wet. It's important to remember that extremely dry weather and very wet weather are both natural features of the climate in western Montana. Glaciers of ice and huge rivers flowed out of many of the mountain canyons in Montana only 8,000 years ago. According to many geologists, we are in a period called an interstade: an interval between glaciations. A look at the historic record shows the potential for catastrophic floods along the Clark Fork River.

Weather records available for western Montana date back to 1868. These records show that during the past 125 years, the climate here has been relatively dry, with periods of intense rainfall (1908) or heavy snow (1886) that have often resulted in devastating floods. Over the past 90 years there have been at least four major floods along the Clark Fork River between Butte and Missoula. One result of these floods has been the deposition of ~6.5 million cubic yards of sediments, much of it contaminated mine waste from Butte and Anaconda, at the Milltown Dam. An analysis of past floods may offer some insights about the effects of future floods.



Flood of June, 1908: The following information was compiled from news accounts in the Butte Miner for June 4-11, 1908. Heavy rains for 33 consecutive days resulted in the largest flood of the century. Scientists working on Superfund cleanup in 1993 estimated the peak flow of the Clark Fork to have been 48,000 cubic feet per second (cfs), close to the value of 42,500 cfs used by FEMA in constructing the 100-year floodplain map for Missoula. Most of the railroad bridges along the Clark Fork were destroyed or severely damaged and rail traffic slowed or stopped completely for a week. News accounts mentioned flooding and deaths by drowning in Livingston and Great Falls. One story mentioned that water from the Kaw River was 10 feet deep in downtown Topeka, Kansas, indicating that the floods of June, 1908 were regional, much like the floods in the upper Midwest in the summer of 1993. The dam built by W.A. Clark at Milltown withstood the flood, but water going over the dam was reported to be 12.5 feet high (see photo) and a channel 3-feet deep by 30-feet wide was blasted at the base of the dam on the south side to relieve pressure and prevent dam failure.

East of Missoula at Turah, 300 feet of Northern Pacific track washed out. At high water, the Clark Fork

(see Floods - pg.4)

Letter from the Chairperson

Dear Reader,

In this issue, I would like to address an advertising supplement that was inserted in several large Montana newspapers on June 22. This supplement was sponsored by ARCO, who is the Possible Responsible Party (PRP) at the Milltown Superfund site, and in small print at the top reads, "Environmental Report to the Community: No. 3 in a series." By offering you an alternative view of the opinions laid out in this expensive advertisement, I hope to show you that you can't believe everything that you read, and that there are two sides to every story.

Let's begin with the title, "Monitoring the Environment of the Milltown Reservoir." This is a interesting and ironic choice of words, given that with the plan ARCO is offering for Milltown, monitoring the reservoir is exactly what Montanans will be doing for the next few hundred years. Rather than cleaning up the reservoir and actually doing something with the hazardous waste that remains in the river, ARCO would like to leave the sediments where they are, allowing them to continue to pollute the alluvial aquifer which is a portion of the headwaters for the Missoula Sole Source Aquifer. An actual cleanup-oriented title could have been "Cleaning up the Environment of the Milltown Reservoir."

Inside the full color supplement the first section is titled "Decisions on the Future of the Reservoir." The paragraph reads, "Although the arsenic in the reservoir sediments is of concern to both ARCO and the EPA, an EPA Risk Assessment—released in 1993— states that the sediments pose no threat to the human health or the environment. Plants, animals, and wetlands in the affected area have all been tested and have shown to be safe and flourishing."

I offer an alternative opinion. First off, strike the words that the sediments pose no threat to the environment. If this is true, then why are the people in Milltown no longer using their own wells, and relying on a new water system the EPA paid to have installed? It is known by all parties involved that the sediments in the reservoir continue to pollute the aquifer. How can anyone say that the sediments pose no risk to the environment? Perhaps ARCO doesn't consider the alluvial aquifer part of the environment.

For their statement that the "plants, animals and wetlands in the affected area have all been shown to be safe and flourishing;" this is ARCO's interpretation of the data. Let me give you a little more information. According to the Continued Releases Report issued on the reservoir, sediment benthos, which are all the plants and animals living on or closely associated with the bottom of a body of water, showed definite affects from metals and arsenic in the Milltown sediments. A strong positive correlation was established between elevated metals levels and higher numbers of *Chironomidae*, a genus of macroinvertebrate that prospers in metal-contaminated environments. Aquatic vegetation also showed effect from metal contamination. So while ARCO may say the plants and animals are "safe and flourishing," you and I must question why there is an increased population of insects that are heavy metal tolerant, and where are the insect that indicate a healthy environment?

Now lets move to the section titled "Plans for the River and the Reservoir." This paragraph reads, "The recent EPA Risk Assessment found the only problem in the Milltown area was ground water contamination—a problem that was addressed with the new water system." Wait a minute—didn't they just tell us there was no threat to the environment? Then they say, "Therefore, EPA determined that no immediate risks exists to either people or the environment in Milltown." Merely installing a new well for the Milltown people to obtain water did not alleviate any of the pollution that continues to pollute the aquifer.

ARCO goes on to state that they are talking with the Milltown Water Users Association (MWUA) about setting up a fund to insure that the water system is maintained into the future. What they don't tell you is what else they are trying to do. They are also trying to get MWUA to petition the State of Montana to create a Controlled Groundwater Area. If everything is so safe at Milltown, why does ARCO want this? Because it is an Institutional Control, which is a way to limit public exposure to the groundwater, and not have to actually deal with a cleanup.

The last page of this expensive advertisement is titled "Common Concerns About the Reservoir," and is a question and answer section. One question posed reads, "What about

Milltown Technical Assistance Committee
P. O. Box 9086
Missoula, MT 59807

Board of Directors
Tina Reinicke-Schmaus, Chairperson
258-6244
C. B. Pearson
Linda Lee
Robert Benson
L.F. Schombel
Brian Sherry
Bob Whalen

Technical Assistance Advisor
Steve Blodgett

Grant Administrator
Ruth Beyer

This newsletter was produced by MTAC

WHAT IS MTAC?

The Milltown Technical Assistance Committee (MTAC) was formed by a group of citizens and area agency representatives that came together with the common goal of affecting a permanent remedy at the Milltown Reservoir Superfund Site. We received our first grant of $50,000 from the Environmental Protection Agency (EPA) in 1991. Just this last spring we again applied and received a second grant of $50,000.

This money is given by the EPA to organized community groups with the intention to promote public involvement in decisions on site-specific cleanup strategies under Superfund. With our money, we hire a Technical Advisor, Steve Blodgett, to interpret site-related technical information, thereby helping us to understand and comment on site-related information, and thus participate in cleanup decisions.

We also produce this newsletter with some of our money. If you wish to get on MTAC's own mailing list, please fill out and return the shaded coupon on the back. If you are receiving two copies, or do not wish to receive this newsletter, please let us know.

Another way we work to inform the public is through radio commentaries which air every fourth Thursday at 5:55 PM on KUFM in Missoula at 89.1 FM and in Great Falls at 89.9 FM. The schedule for the next three months is August 25th, September 22nd, and October 20th. Please tune in.

We also hold a public meeting the first Wednesday of each month at the Missoula City/County Health Department, Rm. 201, at 7:00 PM. Our next meeting will be September 7th. We look forward to seeing you become involved in the superfund decisions that will directly affect your future. You can count on our continued involvement!

Letter cont'd...

pollution leaking around the dam?" ARCO's answer is, "Montana Power Company owns the dam, which meets all federal safety standards." ARCO did not even answer the question asked. The question did not ask who owns the dam—it asked about pollution leaking around the dam. The truth is, pollution is leaking around the dam, as evidenced by the arsenic-contaminated groundwater plume, which is shown on the supplement's map. And that pollution liability is ARCO's.

I could go on indefinitely about this supplement and other written materials ARCO puts out as evidence to show you what a supposedly fine job they are doing up and down the Clark Fork River. I ask that you as a citizen continue to read these materials with a critical eye. If you have any questions, contact us at MTAC, and we'll offer you our viewpoint, too. I have additional copies of this insert if you are interested in reading it.

Sincerely,

Tina G. Reinicke-Schmaus
Chairperson, MTAC

NEW STAFF

MTAC Would like to welcome Ruth Beyer aboard as our new Grant Administrator. Ruth handles our bookkeeping, newsletters and general administration. Ruth is working out of MTAC's new office which is located in Missoula at 228 W. Main on the second floor, room 4.

MTAC'S WISH LIST

Do you have some equipment or office supplies lying around that you aren't using? We are in a new office and would greatly appreciate donations of these items:

*External hard drive for a Mac Plus computer
*Image Writer printer
*Printing services
*Adding machine
*File cabinet
*Table and chairs

If you can help us out with these, please write to us or contact Tina Reinicke-Schmaus at 258-6244. Thanks!

BONNER SCHOOL WINS AWARD

We are pleased to announce that the Bonner School's 5th grade class video entry for the Wellhead Protection Program in the Region VIII competition was chosen as the second runner-up for the President's Environmental Youth Award. The school received certificates signed by the President. In addition, this year, Church & Dwight Co., Inc., makers of Arm & Hammer Baking Soda, included the three runners-up in its grant program. For that award, Bonner received $300 and a plaque. Two hundred twenty five dollars was given to the students' teachers to spend as they saw fit, and $75 was placed in a scholarship fund to be given to one of the students from that class. That money will be awarded during their eighth grade graduation ceremonies, which will be in June of 1996.

In April of 1992 the Montana Water Quality Bureau announced Bonner School as one of three elementary schools to receive $2,000 to design a wellhead protection area around their school well to ensure that their water supply would not be contaminated. The money was used for instructional materials and to produce a video to document the multidisciplinary process used to teach the students about groundwater protection and to put that knowledge to practical use in establishing a wellhead protection area.

Our thanks go out to Dan Moe and his 92-93 school year fifth grade class who were the students working to protect our environment. Should you wish to view the video, there is a copy in the Bonner School Library. MTAC assisted Mr. Moe in obtaining the grant for this project.

Floods

was 13-feet deep in Missoula. The middle span of the Higgins Avenue bridge was undercut by a swift current and eventually the bridge washed out, separating downtown Missoula from the 4,000 people living in the southern part of the city for several days. The most widespread flooding was in the Orchard Homes area. Here, floodwaters extended from near Mullan Road south for one or two miles, flooding farms and homes.

June 6, 1908 appears to have been the peak of the 1908 flood. Helena reported 3.64 inches of rain in a 24-hour period; the smelter at East Helena was flooded with 3 feet of water; two-thirds of the crops in the Gallatin Valley were lost; telegraph lines were down all over Montana; trains were stranded as bridges washed out; business came to a standstill as communications and transportation were interrupted.

On Sunday morning, June 7th, the sun broke through the clouds and waters began receding. The cleanup took months and millions of dollars. The Parrot tailings pond failed in Butte, as did numerous other small tailings ponds along Silver Bow Creek. Large volumes of these mine tailings were flushed tens of miles downstream, ultimately to be deposited at the base of the Milltown Dam and below the dam near the site of the present Eko Compost plant. The Milltown Dam had been completed a year earlier and held up under the strain of water, timber, and sediments rushing over the crest of the dam like a waterfall (see photo).

Statistically, a flood like the one in 1908 is expected to occur once every hundred years on the Clark Fork River. But Mother Nature often ignores statistics. Climatic records from all over the world indicate that wet and dry cycles tend to alternate with regularity. Such cycles appear to be 20 to 40 years long. Weather records from the 1870s and 1880s for southwestern Montana record several months in which precipitation was 10 to 20 times "normal." One conclusion is obvious: The extreme drought of the last 25 years **will** eventually be followed by wet weather.

Meaderville Flood of July 12, 1916: On this date, the Butte & Superior tailings dam in Meaderville (located where the Berkeley Pit is now) gave way and released millions of cubic feet of saturated tailings into Meaderville, Silver Bow Creek, and ultimately the Clark Fork River (Butte Miner, July 12, 1916). Homes were moved from their foundations; people had to be rescued from houses full of muck; and the lower Main Street was covered with a foot of clay slime. The newspaper account does not mention if there had been heavy rains that caused the dam failure, but the result for the Silver Bow Creek and the Clark Fork was similar to the 1908 flood: tailings laden with metal and arsenic washed into the stream channel of Silver Bow Creek and were flushed downstream.

Flood of March 29, 1943: Floodwaters covered much of Montana after heavy rain and melting snow combined with ice melting on rivers to push streams out of their banks (Butte Miner, March 29, 1943). The bridge at Silver Bow, about 5 miles west of Butte, almost washed out as water reached the bottom of the bridge; at Miles Crossing, about 3 miles downstream, the bridge was in precarious condition; and the old Anaconda Road west of Ramsay was covered by three feet of water. In eastern Montana, the Yellowstone River flooded for several hundred miles, causing immense property damage and several deaths from drowning. (see Floods - pg.5)

Flood of May, 1981: The effects of this flood on the Clark Fork were felt most strongly in Deer Lodge. The river overflowed its banks in Deer Lodge and foot-deep water covered the downtown area. Tailings that had been deposited along the floodplain more than 75 years ago were flushed out and re-deposited in new locations. The area along the Clark Fork immediately south of Deer Lodge and the associated irrigation ditches received large deposits of tailings that were washed downstream from Warm Springs. These tailings are clearly visible along I-90 south of Deer Lodge.

Accurately predicting the effects of the next Clark Fork flood on the sediments and dam at Milltown Reservoir is not easy. The dam should withstand the next flood, but Milltown Dam was built to last 75 years and is now 86 years old.

The sediment pile at the dam is thicker now than in 1908, and the water depth at the dam ranges from 30 feet at the intake area to only 8 feet at the auxiliary spillway.

A large flood would be likely to scour contaminated sediments from the face of the dam and wash them downstream through Hellgate Canyon to be re-deposited on the floodplain in Missoula. Sediment scouring at Milltown Dam has occurred many times in the past 86 years during spring runoff. Thickest deposition will be in the old river channels and slack water areas like the one upstream from the weir at Council Hill. Here, these contaminated sediments will rest on top of the Missoula aquifer. If these sediments were to be deposited on top of the Missoula sole-source aquifer, the threat to the environment, groundwater, and human health is unknown.

Anyone who has witnessed a large flood knows that the forces of nature can make even the strongest man-made structures look pathetically weak and ineffective. Four large floods in the last 85 years have had major effects on the Clark Fork River and Milltown Reservoir. Millions of yards of contaminated sediments in the Milltown Reservoir offer clear evidence that floods and normal streamflows have carried mining wastes from Butte to Milltown. Because the EPA and ARCO will very likely agree to leave the contaminated sediments in the Reservoir, it may be more appropriate to call it the "Milltown Repository."

MTAC THANKS VOLUNTEERS WITH DEDICATION

MTAC would like to dedicate this issue of our newsletter to our many valued volunteers. Through the Senior Environmental Corps we have received the help of Tom Frangos, John Stewart, Renee Long, and Rod Sultzbach.

Other volunteers we would like to recognize are Gerald McCauley and Amy Long. Gerald is a chemist and Amy designed our new logo, which appears on the cover of this newsletter, and painted a beautiful four-color poster of the logo. The logo is a view of the Milltown dam, looking at it from the north.

Many thanks to Amy and all the volunteers that give their time and expertise to inform the public. If you are interested in volunteering for MTAC, please contact Tina at 258-6244.

Please sign up for our mailing list - it's free!

MTAC NEWS is a free publication. The purpose of this newsletter is to inform citizens about the Superfund site at Milltown. Its production and distribution are made possible by a technical assistance grant from the Environmental Protection Agency.

If you would like to receive this newsletter, please fill out the following form and sent it to us at:

Milltown Technical Assistance Committee, PO Box 9086, Missoula, MT 59807

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ADMINISTRATIVE RECORD

To: State of Montana
Natural Resource Damage Litigation Program
Old Livestock Building
1310 E. Lockey
Helena, Montana 59620-1425

RECEIVED
FEB 21 1995
NATURAL RESOURCE
DAMAGE PROGRAM

From Rick Pukis
3615 South 3rd Street West
Missoula, Montana 59801

Dear State Officials,

I saw your notice in the Missoulian and decided to review the Restoration Determination Plan at the Mansfield Library. I was surprised at the number of volumes and the large amount of information available on this program. Before I comment on the restoration effort, I believe your comment period should be extended because of the amount of time required to review the documents; February 21, was not enough time.

The phase that kept repeating itself through out the document *"The remedy will not return injured resources to baseline, nor is it intended to."* was extremely disheartening. Knowing that many of our natural resources are forever lost, is a tragedy in scale and magnitude that is unbelievable. It is hard to understand why we let events like these happen in the first place.

I want to focus my comments on the Milltown Dam Section. When I read there are 6.6 million cubic yards (pp.10-1) of contaminated sediments sitting behind the dam, I believed action would be taken to defuse this time bomb. I was shocked to read that alternative D, no action was picked to resolve the looming problem we have at the Milltown site. I believe Alternative A removal of the contaminated sediments and removal of the dam is what should be done. Leaving that site the way it is, is asking for a catastrophe to happen. First, if a flood would ever run through Milltown (and odds are, once that contaminated sediment is left there, one would) life in the Missoula Valley and the Clark Fork River would be devastated. One must remember that dam was built in 1907 and will eventually come down, flood or not. Reducing the effects of these impacts, by the removal of the contaminated sediment is what should be done.

Second, and more importantly, there is no geological barrier between that site and the valley's aquifer, the sole source of our water. It seems only logical that chemicals from this site over a period of time will find there way into our aquifer. The repercussions of this looming disaster makes the 109.3 million clean up bill of alternative A, a bargain. Please, do not make the wrong decision, a decision that would affect the lives of the citizens of Missoula and of Montana for centuries. A decision that leaves recovery of the number one superfund site in the U.S. hundreds to thousands of years to occur. A remedy that is not even intended to return injured resources to baseline.

Sincerely,

Rick Pukis

MTAC
P. O. Box 9086
Missoula, MT 59807

RECEIVED
FEB 21 1995
NATURAL RESOURCE
DAMAGE PROGRAM

February 18, 1995

N.R.D.L.P
Old Livestock Bldg
1310 E. Lockey
Helena , MT 59620-1425

ADMINISTRATIVE RECORD

Dear Sirs:

I am writing this letter for the Milltown Technical Assistance Committee (MTAC). We want to go on record as opposing the Natural Resource Damage Assessment Programs recommendation of option 10D, no clean up of the Milltown Reservoir Superfund Site. We do so for the following reasons.

This decision offers no protection for the people of Milltown from future contamination of their water source. In 1985, a new water system was put in next to an existing Milltown well further from the contamination. So far, there has been no arsenic found in this well. In 1994, the Missoula County Health Department put into place the Missoula Valley Aquifer Protection Ordinance which does not allow any new wells within 1,000 feet of a contaminated water source. This was written to protect people from future problems with pollution. The present Milltown water system sits about 850 feet from the boundary of the arsenic plume. It would not be allowed to be placed where it is under the current ordinance.

ARCO has made the statement that the arsenic plume is not growing, but is stable. This NRDP report echoes what ARCO has claimed. MTAC does not agree with this assessment. There are several deficiencies within the testing which has been done up to now. One is the frequency of the testing. To make a claim that the plume stable, testing must be done more frequently over a period of several years. The wells all must be tested at the same time intervals and at several depths within each well. This has not yet been done. There is also one well at the edge of the arsenic plume which has shown a variance in its readings, indicating that the boundary of the plume is in a state of flux. I also have a problem with the assumption that the plume will not move any closer to the present Milltown water system. The contaminated sediments which sit behind the dam travelled 120 miles from Butte. If the problem can travel that far, I think it is highly conceivable that the arsenic can travel another 850 feet. If the arsenic gets into this present water system, it will be a much bigger problem, because only 35 households were affected in 1981. Now, all of Milltown gets its water from the same source, so all of Milltown will be affected if the arsenic reaches the new water system. Milltown needs to be protected from future contamination. The

'leave the sediments alone' decision does not offer any protection or any hope of future solutions should the contamination problem repeat itself.

The studies done by ARCO and EPA show that the arsenic plume extends downstream, beyond the dam. The assumption that the problem ends where the sediments do, at the dam, means that under stable conditions, the arsenic should not extend downstream from the sediments. This clearly is not the case but instead suggests that there has been movement of the arsenic plume. This then brings up the threat to the Missoula Valley sole source aquifer, and to the 40,000 people who use it. Again, just like Milltown, Missoula is being asked to live with the arsenic threat for the next several hundred years, with no protection offered should the arsenic move further downstream into their sole source aquifer.

The NRDP has assumed that the US EPA will take care of any human health risk at the time of their Record of Decision (ROD), so they did not address this issue. In our discussions with EPA, they said that this report is going to make it more difficult, in their negotiations with ARCO, to come to a cleanup decision which is different than this. MTAC feels that it is the responsibility of the State of Montana to look out for the best interests of the people of Montana, which includes the residents of Milltown and Missoula, not what is best for the pocketbook of ARCO. To assume that the EPA will do this sets up the scenario of no protection being offered for Milltown or Missoula. It is our hope, and recommendation, that this no cleanup decision be discarded, and that a more favorable, protective solution for the people of Milltown and Missoula be considered.

Sincerely,

Brian Sherry

Brian Sherry
President, Milltown Technical Assistance Committee

CTEC

Citizens' Technical Environmental Committee
P.O. Box 593
Butte, Montana 59703
(406) 496-4433

Natural Resource Damage Litigation Program
State of Montana/Department of Justice
P.O. Box 201425
Old Livestock Building
1310 East Lockey Avenue
Helena, MT 59620-1425

ADMINISTRATIVE RECORD

Dear Sirs:

The following comments on the Restoration Determination Plan were prepared by CTEC's technical assistants. Since CTEC has not taken a stand on the RDP, you will find that the comments do not include recommendations, just technical questions. The technical questions are limited for two reasons. One, the reasoning behind choosing the alternatives was explained well, and two, the alternatives were not technically specific. For example, alternative 2A does not discuss or reference where and how the proposed reservoirs would be built.

Technical Comments on Restoration Alternatives

Butte Hill Groundwater resources--

1. According to at least one water resources professor at Montana Tech. surface water to fill reservoirs is not in adequate supply in the Butte area. Where and how would the reservoirs be constructed?

2. Would reservoirs further limit instream flow in Silver Bow Creek and the Clark Fork River?

3. Would NRDP consider pumping and treating Berkeley Pit mine flooding water instead of building reservoirs?

4. Will the construction of new reservoirs block industrial, agricultural. residential, and (especially) recreational use of the watershed basins above the locations of the new reservoirs? If so, wouldn't you consider this a type of institutional control placed on these pristine water sheds? Doesn't this idea defeat its overall intent (i.e. Butte may have water, but residents can't hunt or build properties on the restricted watersheds).

5. Does the construction of new reservoirs agree with Butte/Silver Bow's overall zoning master plan? Blocking the use of new watersheds may prohibit residential development in areas where Butte was planning to residentially expand.

Rocker Groundwater and Soil Resources--

1. Has the groundwater/soil interaction been studied in enough detail to accurately model what exactly happens to the arsenic? This question is based upon the notion that once the soil has been remediated, the groundwater may simply recontaminate the backfill material as it rises in the spring of the year.

2. Is 500 ppm arsenic a strict enough removal concentration for the area to be used recreationally, residentially, and industrially? If future law provides for a more extensive removal (i.e. 250 ppm), who is responsible for remediation?

3. What models were used to determine what areas were above 500 ppm arsenic (i.e. indicator kriging)? How many soil samples were tested in the area to determine if the concentration of arsenic was above 500ppm?

4. How many years will it take before restrictions on groundwater use can be eliminated? Will this adequately fulfill NRDP's restoration intent?

5. Will long term residential and business growth of the Rocker area suffer more from contamination related deterrents under the preferred "B" alternative than if the "A" alternative were chosen?

Silver Bow Creek Resources--

1. We believe that the majority of members of CTEC support the preferred alternative "A" for restoration of Silver Bow Creek through complete removal of the tailings.

2. How do you plan to remove the contaminated sediments from within Silver Bow Creek? How much will that "dredging" cost?

Montana Pole Site--

1. Regarding sludge disposal, where will the sludge be incinerated? What is the average makeup of the sludge that would be generated?

2. Does this alternative leave any room to initiate a more appropriate BACT (Best Available Control Technology) as technology progresses (anytime from 2015 to 2044, the period during which NRDP proposes to continue pumping and treating)?

3. Does this alternative allow future residential use?

Upland Area Resources--

1. While alternative 7A may revegetate the area to what it may have looked like before smelting activities, should NRDP not also consider recontouring the disturbed area to resemble a more natural topography?

2. After the revegetation stages are completed, who is responsible if some type of disaster occurs and the revegetation does not establish itself again (i.e. a large wildfire)?

Clark Fork River--

1. Under the option 9A, low-flow augmentation is discussed as one of the elements of the alternative. Where will the water come from?

Warm Springs Ponds--

1. One of the reasons given for low-flow augmentation of the Clark Fork River is to dilute releases from Warm Springs Ponds. If it is NRDP's opinion that there will still be hazardous releases from the ponds, how come there are no plans for restoring the ponds?

2. By not having restoration alternatives for the Warm Springs Ponds, is the NRDP endorsing the CERCLA interim Record of Decision for the ponds.

Anaconda Area Resources--

1. Without adding caps on the Anaconda or Opportunity Ponds what is the risk of air transported contamination?

Sincerely,

Cameron Beul

Cameron Beul
Senior Technical Assistant

MONTANA TECH

Butte, Montana 59701-8997
(406) 496-4101

LIBRARY
Voice phone: (406) 496-4281
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Date 3/23

To: NRDLP Fax No: 444-0036
Department of Justice
State of Montana

From: Cameron Beall, CTEC

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ADMINISTRATIVE RECORD

ARCO'S INITIAL COMMENTS ON THE RESTORATION DETERMINATION PLAN

UPPER CLARK FORK RIVER BASIN

MARCH 1995

I. INTRODUCTION: SCOPE OF ARCO COMMENTS.

The Atlantic Richfield Company ("ARCO") submits this document in review of the January 1995 Restoration Determination Plan (the "RDP") prepared by the State of Montana Natural Resource Damage Program. As background, in 1983 the State of Montana filed a complaint alleging ARCO, as sole defendant, is liable for injury to natural resources located generally within the Upper Clark Fork River Basin. The litigation was brought by the State pursuant to the natural resource damage provisions of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. § 9601 et seq. ("CERCLA"), and the Montana Comprehensive Environmental Cleanup and Responsibility Act ("CECRA"). In a separate administrative process paralleling the Montana v. ARCO litigation, the State has undertaken a natural resource damage assessment in an attempt to document the alleged injuries to its natural resources and determine the amount of damages it will seek from ARCO in the litigation. The RDP is one component of the State's natural resource damage assessment.

This document is not ARCO's complete and comprehensive response to the RDP. Because the State asserts that the RDP embodies the opinions of expert witnesses who may testify at trial, ARCO will respond to the RDP pursuant to the Court's October 3, 1994 Scheduling Order, as modified by the Court's Order dated January 31, 1995. The Court's Scheduling Order as modified requires disclosure of ARCO's expert opinion reports in July 1995. The Scheduling Order established by the Court, and not the date by which the State requested comments on the RDP, controls the timing of ARCO's response.

Moreover, the very nature of the RDP does not permit ARCO or the public at large to provide a complete and comprehensive response at this time. The RDP is replete with conclusory statements, which cannot be evaluated in the absence of further information about the statements' underlying facts, assumptions, and opinions. Such information is critical to ARCO's development of a reasoned response to the RDP, and will be sought through depositions of the RDP's authors during the period for discovery provided under the Court's Scheduling Order.

In short, the deadline chosen by the State for submittal of ARCO's comments on the RDP is meaningless given the format and content of the RDP, the timing of its distribution, and the context in which it was developed. In response to the State's request for comments, however, this document provides a summary overview of the flaws in the RDP, discussing in particular why the RDP fails to meet the NRDA Rule requirements for publication of a Restoration and Compensation Determination Plan. This document, together with the opinions of ARCO's experts which will be disclosed in accordance with the Court's Scheduling Order, constitute ARCO's comments on the RDP. Thus, both this document and the reports of ARCO's experts for purposes of the litigation must be considered by the State in any response or further analysis of its restoration damages positions.

II. RELATIONSHIP BETWEEN THE MARCH 1994 RESTORATION REPORT AND THE JANUARY 1995 RESTORATION DETERMINATION PLAN.

In March 1994 the State published a Restoration Report, the asserted purpose of which was to list and describe alternatives for restoration of natural resources in the Upper Clark Fork River Basin. See State of Montana Natural Resource Damage Program Restoration Report, Upper Clark Fork River NPL Sites (March 1994) ("Restoration Report"), p. 1-1; see also ARCO Critique of State of Montana Restoration Report, Upper Clark Fork River Basin, January 1995, provided to the State in connection with Defendant's Supplemental Response to Plaintiff's Second and Third Sets of Requests for Production of Documents, January 5, 1995 ("ARCO's Critique").[1] The State made a broad claim that its Restoration Report was prepared in accordance with CERCLA, CECRA, and with the Department of the Interior ("DOI") Natural Resource Damage Assessment regulations (the "NRDA Rule"). See id. Yet none of these authorities required its publication. The State itself admitted that the Restoration Report was "not required by the [NRDA] regulations." Id.

---

[1] ARCO's Critique was not ARCO's first response to the State's Restoration Report. ARCO provided the State with extensive confidential comments on the Restoration Report as early as April 1994. The confidential April 1994 comments were provided in connection with the parties' settlement process, as described in a March 16, 1993 Memorandum of Understanding ("MOU") approved by the Court. Under the MOU, ARCO also provided extensive confidential comments on the State's methodologies for quantification of injury and estimation of damages.

As discussed in detail below, the NRDA Rule requires trustees to publish a Restoration and Compensation Determination Plan, and the State cannot fulfill this requirement by publishing other documents of its choosing, such as the March 1994 Restoration Report and the January 1995 RDP. More important for purposes of this discussion, however, is the State's claim that it considered comments on the Restoration Report in developing the RDP. See RDP at 1-1. In fact, it did not consider ARCO's comments.

The extensive comments provided by ARCO on the Restoration Report have been largely ignored in the development of the RDP. The RDP is little changed from the Restoration Report in most, if not all, significant respects. The State has not provided responses to ARCO's comments, instead insisting that such responses "will be contained in a subsequently released Response to Comments document." RDP at 1-1 through 1-2.

Moreover, because the Restoration Report was a device of the State's own invention, the public had no obligation to comment upon it. Thus, publication of the RDP affords the first opportunity for the public to review and provide input regarding the State's restoration plans, under the process requirements of the NRDA Rule. This is a significant point, because elements of the Restoration Report were carried forward into the RDP which are of interest to the public and which may, in fact, engender public concern. For example, different RDP alternatives assume disposal of waste materials at Opportunity Ponds and the construction of a new repository at Milltown. Although the alternative based on the latter assumption was not selected by the State, both examples highlight ARCO's concern that the RDP is built upon critical assumptions about which the public has yet to comment.

The State is required by the NRDA Rule to respond fully and fairly to any and all comments received on the RDP, including the opinions of ARCO's experts provided to the State in litigation, if in fact this document is offered by the State in fulfillment of its obligation to prepare a Restoration and Compensation Determination Plan. The State acknowledges this critical requirement, but to date has chosen to ignore it. See RDP at 1-2.

III. THE RESTORATION DETERMINATION PLAN DOES NOT SATISFY THE REQUIREMENTS OF THE NRDA RULE.

A. Threshold Deficiencies Of The State's Restoration Determination Plan.

1. The Restoration Determination Plan Does Not Satisfy The NRDA Rule's Formal Requirements For Publication Of A Restoration And Compensation Determination Plan.

The State claims that its RDP was prepared "pursuant to and in accordance with" the NRDA Rule. RDP at 1-1. In fact, however, the RDP fails to meet the NRDA Rule's most basic requirements for preparation of a Restoration and Compensation Determination Plan. In light of this and a myriad of other deficiencies with the State's damage assessment, the State is not entitled to the rebuttable presumption afforded under CERCLA § 107(f) for natural resource damage assessments made in accordance with the NRDA Rule. In this section, threshold or systemic deficiencies in the approach followed by the State in development of the RDP are discussed, and specific requirements of the NRDA Rule which the State has ignored or misconstrued are highlighted.

a) The Restoration Determination Plan Does Not Contain The Required Elements of A Restoration And Compensation Determination Plan.

Despite its general claim of compliance with the NRDA Rule, the State admits that its RDP does not fully satisfy the Rule's requirements for publication of a Restoration and Compensation Determination Plan. As the State explains:

> Section 11.81 of the DOI regulations requires the preparation of a Restoration and Compensation Determination Plan (RCDP). Under the regulations, the RCDP is comprised of two basic components. First, the RCDP is to array restoration alternatives and then select from among the alternatives. Second, the RCDP is to outline various methodologies for estimating the costs of the alternatives and for estimating compensable values. The instant Restoration Determination Plan (RDP) undertakes the former task but not the latter. Cost estimating and valuation methodologies were previously outlined by the State in the Assessment Plan, Part II, released on April 24, 1992 for public comment. These comments have been considered by the State of Montana; responses are contained in the Responses to Comments volume of the Report of Assessment.

State RDP at 1-1.

Thus, the State admits that its RDP is a creation of its own making, and that it does not satisfy § 11.81's mandate that trustees must prepare a Restoration and Compensation Determination Plan. Nevertheless, the State appears to imply that when considered together, its RDP and its Assessment Plan Part II satisfy § 11.81, i.e., constitute a Restoration and Compensation Determination Plan.

Contrary to the State's position, the RDP's failure to address cost and valuation estimating methodologies cannot somehow be "cured" by reference to the Assessment Plan, Part II. Part II of the Assessment Plan addressed cost and valuation estimating methodologies in only cursory fashion. Moreover, in preparing the RDP the State largely ignored ARCO's comments on Part II of the Assessment Plan which related to cost and valuation estimating methodologies. For example, ARCO's comments emphasized the need to respect CERCLA's mandate against double recovery, noting that the mandate would be violated by the State's practice of employing economic methodologies based on unfounded assumptions and speculative probability estimates. See Comments of Atlantic Richfield Company on the State of Montana's Assessment Plan, Part II (July 1, 1992) ("Part II Comments"), pp. 27-28.

Even had the State fairly considered public comment on its cost and valuation estimating methodologies -- which it did not -- the NRDA regulations have undergone extensive revision since publication of the Assessment Plan, Part II in April 1992. A final NRDA Rule was published in 1994, which provided vastly different economic methodology guidance than that provided in the original NRDA Rule. Most importantly, the final NRDA Rule provides a set of criteria by which the State's choice of cost and valuation estimating methodologies must be measured, and it allows trustees to use a combination of methodologies "only so long as the [trustee] does not double count... ." See 43 C.F.R. § 11.83(a)(3).

In summary, the State's cursory reference to cost and valuation methodologies within its RDP fails to correct a deficiency with the NRDA process followed by the State, which has

been apparent since publication of the Assessment Plan, Part II and commented upon by ARCO on various occasions.

b) The Restoration Determination Plan Was Not Published In The Time Period Allowed For Publication Of A Restoration And Compensation Determination Plan.

Even putting aside the content deficiencies discussed above, the RDP was not published in timely fashion. The NRDA Rule provides that the Restoration and Compensation Determination Plan should be part of the Assessment Plan. If existing data are not sufficient to develop the Restoration and Compensation Determination Plan at the time the overall Assessment Plan is made available for public review and comment, the Restoration and Compensation Determination Plan may be developed after completion of the Injury Determination or Quantification phases. See 43 C.F.R. § 11.81(d)(1). In any event, the Restoration and Compensation Determination Plan must be completed and made available for comment before publication of the Report of Assessment:

> The Restoration and Compensation Determination Plan, along with comments received during the public review of that Plan and responses to those comments, shall also be included in the Report of Assessment.

43 C.F.R. § 11.90(c) (emphasis added).

Despite this requirement, the State published its RDP for the first time as part of the Report of Assessment. See January 13, 1995 letter from Messr. Collins to Messr. Curley (enclosing the RDP as part of the Report of Assessment). For obvious reasons, comments upon the RDP and responses to comments were not provided. By delaying the opportunity for comment upon its selected alternatives until after publication of the Report of Assessment -- a final decision making document -- the State violates both the letter and the spirit of the NRDA Rule's alternative selection process. See id.

Moreover, the Report of Assessment is intended to accompany and support the trustee's written demand for payment. See 43 C.F.R. §§ 11.90(c), 11.91(b). Thus, the NRDA Rule

clearly contemplates that the public and PRPs should be given an opportunity to comment upon a trustee's restoration plans before a final demand for payment is made. Id. Here, no such opportunity existed.

Notably, the State recognized its failure to publish the RDP in timely fashion when it submitted comments in response to DOI's 1994 NRDA Biennial Review Rulemaking. In those comments, the State cited portions of the NRDA Rule which require publication of a Restoration and Compensation Determination Plan before or shortly after completion of the injury determination and quantification phase. The State then pleaded with DOI to alter the timing of the Restoration and Compensation Determination Plan, insisting that the arraying and selection of alternatives should occur at the end of the assessment process. See Comments of the State of Montana (Advanced Notice of Proposed Rulemaking, 43 C.F.R. Part 11). This is an admission of the State's failure to comply with the NRDA Rule as promulgated, further supporting ARCO's position that the State is not entitled to a rebuttable presumption for its assessment.

2. The Restoration Determination Plan Includes Alternatives Which Are Designed To Restore Private Lands.

Under Section 107(f)(1) of CERCLA, the State can only recover for injury to natural resources "belonging to, managed by, controlled by or appertaining to" the State. CERCLA § 107(f)(1), 42 U.S.C. § 9607(f)(1). Section 101(16) of CERCLA, in turn, defines "natural resources" as those resources "belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by . . . any State." CERCLA § 101(16), 42 U.S.C. § 9601(16). The NRDA Rule repeats this statutory definition. See 43 C.F.R. § 11.14(z). Finally, State of Ohio v. U.S. Dept. of the Interior, 880 F.2d 432 (D.C. Cir. 1989), reviewed CERCLA's legislative history and confirmed that the scope of government trusteeship does not include purely private resources:

> Early drafts of CERCLA would have covered private property. See H.R. 7020, 96th Cong., 2d Sess., § 5 (1980) . . . (damages to include "all damages for personal injury, injury to real or personal property, and economic loss, resulting

> from such release or threatened release"); H.R. 85, 96th Cong., 1st Sess., § 103(a)(2), . . . (damages to include "injury to, or destruction of, real or personal property"); S. 1480, 96th Cong., 1st Sess., § 4(a)(2)(A) . . . (damages to include "any injury to, destruction of, or loss of any real or personal property"). Each of these proposed provisions was rejected and the statute's "natural resources" formulation was adopted instead.

Id. at 460. In the words of the Court, "Congress quite deliberately excluded purely private resources from the ambit of the natural resource damage provisions." Id.

Contrary to the above authority, the RDP, like the Restoration Report, includes activities which are designed to restore private upland and riparian areas, including Smelter Hill, the Anaconda Area and areas within the floodplains of Silver Bow Creek and the Clark Fork River. These areas are purely private resources -- not public resources -- and thus are not the proper subject of restoration alternatives, whether selected or merely proposed.

3. The Restoration Determination Plan Seeks To Restore Resources Which Are Not Injured.

The State may not formulate plans (or expend monetary damages which may ultimately be recovered) to restore resources which are not injured. At this stage of the process, the State must, at a minimum, conclude through its own injury determination and quantification process that resources for which it seeks recovery of restoration damages are injured. Section 11.82 of the NRDA Rule provides:

> The authorized official shall develop a reasonable number of possible alternatives for the restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the injured natural resources and the services those resources provide.

43 C.F.R. § 11.82(a) (emphasis added). Nevertheless, the State has, for example, selected an alternative for the Clark Fork River (4A) which includes excavation of 4100 acres of floodplain

soils which the State acknowledges are not injured by application of its own criteria.[2] The State contends without reference to any objective criteria that these soils contribute to aquatic injury. A mere contention of injury is not sufficient under the NRDA Rule. Rather, the Rule sets forth a number of specific steps that must be followed to determine, substantiate and quantify injury. Section 11.62 provides:

> The authorized official shall determine that an injury has occurred to natural resources based upon the definitions provided in this section... . The authorized official shall test for injury using the methodologies and guidance provided in § 11.64 of this part.

43 C.F.R. § 11.62(a). Section 11.70 further provides:

> Upon completing the Injury Determination phase, the authorized official shall quantify for each resource determined to be injured and for which damages will be sought, the effect of the discharge or release in terms of the reduction from the baseline condition in the quantity and quality of services... . The purpose of the Quantification phase is to quantify the effects of the discharge or release on the injured natural resources for use in determining the appropriate amount of compensation.

43 C.F.R. § 11.70(a), (b).

In short, the State cannot simply declare that a resource is injured or contributes to injury, as it did in the case of the Clark Fork River alternative discussed above and others. Rather, the State must define, substantiate and quantify injury as mandated by the NRDA Rule. Resources for which these requirements are not satisfied are outside the scope of any cognizable claim for damages. Accordingly, such resources may not be included in formulating restoration alternatives.

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[2] As detailed in ARCO's prior submittals to the State through discovery and under the MOU, ARCO believes the criteria and procedures followed by the State for identification and quantification of injury are generally flawed. As such, ARCO views the RDP to propose restoration of many resources which are not injured or may be fully restored through planned response actions.

4. The Restoration Determination Plan Seeks To Restore Resources For Which Injury Has Been Overestimated.

The injury determinations underlying the State's restoration alternatives are, in many cases, inaccurate and exaggerated. For example, the State asserts that groundwater injury is demonstrated by exceedances of secondary MCLs, and it relies on a theory that injury is caused by sources that "rerelease" hazardous substances. See RDP at 1-11. These critical injury determination errors, and numerous others, have been addressed in detail in ARCO's resource-specific injury quantification submittals, provided to the State in connection with Defendant's Supplemental Response to Plaintiff's Second and Third Sets of Requests for Production of Documents, January 5, 1995. Rather than repeating the substance of its injury quantification submittals here, ARCO incorporates them by reference: Groundwater Resources, ARCO Response to State of Montana Injury Assessment (January 6, 1995); Aquatic Resources, ARCO Response to State of Montana Injury Assessment (January 6, 1995); and Terrestrial Resources, ARCO Response to State of Montana Injury Assessment (January 6, 1995) (collectively the "Resource-Specific Submittals"). The key point remains that the State exceeds its trustee authority to the extent it seeks to restore resources for which it has inaccurately determined injury.

5. The Restoration Determination Plan Is Fundamentally Flawed Because It Rests On An Improper Calculation of Baseline.

The RDP suffers from a malady which afflicts the State's entire assessment process: the failure to properly calculate baseline. The baseline concept is critical to the overall damage assessment process, because it implements CERCLA's causation requirement -- i.e., CERCLA's requirement that natural resource damage liability may be imposed only for damages "resulting from" a release of hazardous substances attributable to the defendant. CERCLA § 107(a), 42 U.S.C. § 9607(a). As the State itself admits, the baseline concept "ensures that liability will only attach to injuries attributable to the release in question." RDP at 1-4.

Moreover, baseline is critical in the restoration damage assessment process, given the NRDA Rule's definition of "restoration" as:

> actions undertaken to return an injured resource to its baseline condition as measured in terms of the injured resource's physical, chemical, or biological properties or the services it previously provided... .

43 C.F.R. § 11.14(ll) (emphasis added). Yet despite the critical nature of the baseline concept, the State fails to calculate baseline in the manner explicitly required by the NRDA Rule and mandated by CERCLA's liability scheme.

a) Baseline Must Represent Conditions That Would Have Existed In The Absence Of The Specific Discharge Under Investigation.

As stated above, restoration involves returning an injured resource to its baseline condition, as measured by resource properties or services. 43 C.F.R. § 11.14(ll) (emphasis added). The NRDA Rule defines "baseline" as:

> the condition or conditions that would have existed at the assessment area had the discharge of oil or release of a hazardous substance under investigation not occurred.

43 C.F.R. § 11.14(e). "Services" is defined as:

> the physical and biological functions performed by the resource including the human uses of those functions. These services are the result of the chemical, physical or, biological quality of the resource.

43 C.F.R. § 11.14(nn).

DOI has noted in response to public comments that there has been confusion about whether restoration activities must restore a resource's physical, chemical and biological properties, or the services the resource provided. See 59 Fed. Reg. at 14272. Yet as DOI explained in the 1986 NRDA rulemaking:

> Recovery will be considered complete upon the determination that natural resource services have been effectively restored. This determination does not

> require that the recovered ecosystem or other resource necessarily be identical to the one lost, but merely that all important and measurable services of the lost resource have been restored. Once that point is reached, restoration or replacement is considered complete.

51 Fed. Reg. 27689 (emphasis added). See also 59 Fed. Reg. 14263 (if trustees determine a resource may have been injured, they proceed to the Quantification stage to "quantify the resulting reduction in services provided by the resource").

In determining the level of baseline services that must be restored several key principles must be followed, all of which the State has ignored. First, baseline cannot simply be equated with pristine conditions:

> Baseline is not intended to represent necessarily pristine conditions, nor is it intended to represent conditions in the absence of 'any' discharge or release. Rather, the rule specifically requires that baseline represent conditions that would have existed in the absence of the specific discharge or release under investigation.

51 Fed. Reg. at 27716 (emphasis added).

Second, "baseline takes into account decreases, as well as increases, in the level of services that would have been provided in the absence of the discharge or release." 58 Fed. Reg. 39338. Improvements in resource services above baseline related to a release of hazardous substances must be considered as an offset to injury, and monetary damages. Thus:

> If a particular resource were injured but nonetheless provided the same or greater level of services, then there would be no reduction in service levels to quantify.

58 Fed. Reg. 39335. See also 58 Fed. Reg. 39335 (DOI notes that the positive effects of a release or discharge should be considered in the quantification phase of a natural resource damage assessment).

Third, "trustee agencies [must] evaluate the effect of preexisting trends when they calculate baseline." 58 Fed. Reg. 39345. Preexisting trends include both natural changes (such as ecological succession) and human-caused changes:

> For example, an area might have been primarily a farming community when a dump was first established, but land use changed during the period of hazardous waste dumping, and much of the area might have been converted to industrial use. These land use changes need to be considered in establishing baseline.

51 Fed. Reg. at 27687. Similarly, if there were releases of hazardous substances into a river which had also received sewer overflows, the presence of the sewer overflows would affect the baseline condition. See 58 Fed. Reg. at 39344 (presenting this hypothetical). Put more concretely:

> [A] PRP's liability for stocking fish depends on whether fish would have existed in the river but for the release in question. If fish would not survive in the river regardless of whether the release had occurred, then PRPs would not be liable for the cost of stocking fish.

59 Fed. Reg. 14270. Cf. 43 C.F.R. § 11.72(b)(1) ("Baseline data should...[take] into account both natural processes and those that are the result of human activities").

Emphasizing the importance of these three baseline calculation principles, DOI provided the following clarification in the 1994 NRDA rulemaking:

> [B]aseline represents the conditions that would have existed had the release or discharge not occurred rather than [simply] the conditions that existed prior to the discharge or release.

59 Fed. Reg. 14270.

There are many reasons why ARCO believes the legal and technical foundation supporting the State's analysis of baseline is flawed, and provides no defensible grounds for quantification of injury and estimation of damages. ARCO's analysis of baseline issues was

presented in its Resource-Specific Submittals, and will not be repeated here.[3] ARCO's Resource Specific Submittals refute many of the conclusory statements in the RDP which reflect fundamental baseline calculation failures, including for example, but without limitation, conclusions such as (1) "mining and mineral processing activities...have resulted...in severe and widespread injuries to natural resources"; and (2) mining wastes "cause fish populations to be reduced from what they would be, on average, by a factor of six." RDP at 1-3, 1-12.

b) The State's "Substantial Recovery" Formula Violates The Baseline Concept.

The State acknowledges that baseline must represent the condition of the resource in the absence of a release of hazardous substances for which ARCO is responsible. See RDP at 1-4. Nevertheless, the State predicates restoration upon whether response actions or a restoration alternative will result in "substantial recovery" of a resource, without regard to the effect of non-ARCO activities and natural releases of hazardous substances upon resource quality. See RDP at 1-5. In so doing, the State has ignored the three baseline calculation principles discussed above.

Regarding the first principle, ARCO provided numerous examples in its Resource-Specific Submittals of the State's failure to consider the impacts of naturally occurring releases and other anthropogenic activities in calculating baseline. These failures have been carried forward in the RDP by the State's substantial recovery formula. The State defines substantial recovery to mean "the estimation of the length of time for the productivity of the resource, or its ability to provide services, to be greatly enhanced relative to existing conditions." RDP at 1-5. By its own admission then, the State presupposes (1) that all diminution in resource services is attributable to metals released from mining and mineral processing; and (2) that ARCO is responsible for all such releases.

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[3] See Groundwater Resources, ARCO Response to State of Montana Injury Assessment (January 6, 1995); Aquatic Resources, ARCO Response to State of Montana Injury Assessment (January 6, 1995); and Terrestrial Resources, ARCO Response to State of Montana Injury Assessment (January 6, 1995).

Both of these unlawful underlying assumptions have been exposed by the detailed legal and technical arguments presented by ARCO in its Resource-Specific Submittals and elsewhere. Thus, the State overestimates the actions required to return a resource to baseline because the analysis starts from the assumption that ARCO is legally obligated to pay not merely to return services to baseline, but for actions which will greatly enhance resource productivity or services relative to the proper without release condition. This assumption is completely at odds with the NRDA Rule's baseline concept, as well as with CERCLA's causation requirement for natural resource damage liability. See 43 C.F.R. § 11.14(ll); CERCLA § 107(a), 42 U.S.C. § 9607(a).

The State also fails to adhere to the second key baseline calculation principle -- that baseline must take into account both increases and decreases in the level of services that would have been provided in the absence of the discharge or release. The most glaring example of this failure involves the Warm Springs Ponds. The State has consistently failed to consider the increase in aquatic and terrestrial resource services attributable to the creation of the Warm Springs Ponds.

The Warm Springs Ponds have increased services in two significant respects. First, development of the Warm Springs Ponds has created significant fisheries and improved terrestrial resource and waterfowl habitat that would not otherwise exist. Second, the Ponds have ameliorated the effects of municipal sewage discharges to Silver Bow Creek, allowing a fishery to develop and prosper on the Upper Clark Fork River. In the absence of the Warm Springs Ponds, inadequate dilution and treatment of Butte municipal sewage discharges would have precluded development of this fishery altogether or, at a minimum, would have severely depressed trout populations compared to their current levels. Yet these important positive impacts have been consistently ignored by the State. The State's injury quantification reports for the impacted resources were silent on this issue. Similarly, the State has formulated an analysis of restoration (and compensable value) damages without considering the Warm Springs Ponds' value. Again, Warm Springs Ponds represents just one example of the State's general failure when calculating baseline to consider both increases and decreases in the level

of services that would have been provided in the absence of discharges or releases allegedly attributable to ARCO.

A third baseline calculation principle violated by the State is the principle that baseline must take into account pre-existing trends affecting baseline resource condition. The goal of the baseline analysis is to estimate the condition of resources in the absence of the release under investigation. Thus, pre-existing trends are relevant to projecting the condition of resources when the effects of the release are isolated and removed. As discussed above, the State failed to account for the past and continuing effects of municipal discharges on the baseline condition of aquatic resources. The State has failed to consider trends affecting other resources as well.

For example, in formulating restoration alternatives, the State ignores the fact that land uses such as grazing would have degraded the riparian corridor along Silver Bow Creek. The effects of overgrazing along Silver Bow Creek are apparent today, and would be present in the absence of impacts from streamside tailings. Evidence of overgrazing is also present along the Clark Fork River and other streams in southwestern Montana. Yet the State ignores these trends and proposes the following actions, among others, for restoration of the Silver Bow Creek corridor:

> An area equal to the extent of riparian wildlife habitat injury...would be replanted with native species of grasses, shrubs and trees to reflect a baseline habitat mix of shrub/forest and agricultural (hay/pasture) habitat types.

RDP at 4-7. Leaving aside issues regarding the scope of Montana's trusteeship and the liability of ARCO for restoration actions generally, these proposed actions would restore Silver Bow Creek resources well beyond baseline. In fact, restoration under any of the State's Silver Bow Creek alternatives would improve resources beyond baseline, based upon any fair appraisal of the services provided by other riparian resources in the same region.

Thus, "substantial recovery," as defined by the State, is in effect a synonym for pristine conditions. The State is not entitled to recover natural resource damages measured by the costs of returning resources to their pristine condition. Without a fair and accurate estimation of baseline -- one which complies with the NRDA Rule and CERCLA's liability scheme -- the State has no basis for determining whether response actions will restore resource services.

B. General Deficiencies Of The State's Restoration And Determination Plan.

ARCO's comments thus far have focused upon threshold, fundamental deficiencies of the State's RDP. The remaining sections will focus upon deficiencies in the RDP which relate to the State's restoration alternative development and selection process. ARCO emphasizes, however, that until the threshold deficiencies are addressed, any alternative selection process undertaken by the State -- even one responsive to the following comments -- would be contrary to the requirements of the NRDA Rule.

1. The Restoration Determination Plan's Preference For Resource Restoration Is Contrary To CERCLA.

Contrary to relevant authority, the State asserts that there is a "statutory preference for restoration" or "a preference for trustee actions that specifically address the injured resources." RDP at 1-4, 1-8. Virtually all of the alternatives proposed by the State involve physical restoration of the affected resource at the expense of considering aquisition of equivalent resources. Thus, the State has failed to address and consider the full range of alternatives available to natural resource damage trustees. This failure violates the NRDA Rule, under which the State claims it is proceeding, and renders the State's entire RDP so inherently biased that it is both useless as a tool to solicit public comment on restoration damages and to calculate those alleged restoration damages.

a) Neither CERCLA Nor The NRDA Rule Express A Preference For Resource Restoration.

Neither CERCLA nor the NRDA Rule express a preference for restoration over rehabilitation, replacement or aquisition of resources as a means by which to restore resource services to baseline. Instead, these authorities emphasize the wide range of alternatives available to natural resource damage trustees.

More specifically, CERCLA requires that monies recovered by a trustee be used "to restore, replace, or acquire the equivalent of such natural resources." CERCLA § 107(f)(1); 42 U.S.C. § 9607(f)(1). In the Preamble to the 1994 NRDA Rulemaking, DOI amplified this conclusion:

> The term 'restoration, rehabilitation, replacement, and/or acquisition of equivalent resources' was introduced to emphasize that trustee officials may select among a wide range of methods. The Department does not believe that the rule should establish a preference for restoration as opposed to acquisition of equivalent resources.

59 Fed. Reg. 14275. Accord, 58 Fed. Reg. 39340. The 1991 NRDA rulemaking echoes this point:

> [T]he trustee may consider a range of actions that might include restoration, rehabilitation, replacement, and/or acquisition of equivalent resources. ... The proposed revision emphasizes the wide range of actions available to the trustee....

56 Fed. Reg. 19757. Even the State admits that "[t]he trustee is advised to select a full spectrum of alternatives for restoring a resource." RDP at 1-7. Yet despite this admission, the State continues to insist there is a preference for resource restoration. The only apparent motive for adopting this position is to inflate the State's claim for monetary damages through costly and impractical project designs involving the excavation, transport and disposal of huge volumes of material.

b) The Authorities Relied On By The State For Its Claim Of A Preference For Resource Restoration Do Not Support The State's Position.

The State cites CERCLA and State of Ohio v. U.S. Dept. of the Interior, 880 F.2d 432 (D.C. Cir. 1989), to "support" its claim that there is a preference for resource restoration. The State argues as follows:

> CERCLA makes clear that the purpose of the natural resource damage provisions is to restore injured resources. For example, the statute requires that monies recovered by a trustee be used "only to restore, replace, or acquire the equivalent of such natural resources." [citation omitted.] Relying on this language, the United States Court of Appeals for the District of Columbia Circuit held that restoration costs are the principal measure of damages in a natural resource damage case. ... According to the Court, in fashioning the natural resource damage provisions Congress intended "to effect a 'make whole' remedy of complete restoration." [citing State of Ohio]

RDP at 1-3 through 1-4.

The State's twisted interpretation of CERCLA's requirement that monies recovered by a trustee be used "only to restore, replace, or acquire the equivalent of such natural resources" transforms a clearly expansive provision into a restrictive one. This provision of CERCLA emphasizes the wide range of alternatives available to trustees, and in no way conditions, ranks or limits a trustee's choice among different types of alternatives. Moreover, the State's reliance on State of Ohio is simply misplaced. In discussing the importance of the restoration component of natural resource damages, the Ohio Court explicitly stated that its use of the term "restoration" was intended as shorthand for the full range of alternatives available to trustees: restoration, rehabilitation, replacement or aquisition of resources. See State of Ohio, 880 F.2d at 441. In short, the authorities relied on by the State support ARCO's position that restoration, replacement and acquisition of alternative resources must all be considered by a trustee. Moreover, the State completely ignored the NRDA Rule provisions cited above, which refute any notion of a preference for restoration.

The State's baseless claim that there is a preference for restoration has profound consequences for the integrity of the RDP. Based on its belief in a preference, the State categorically refuses to consider any and all acquisition alternatives. See RDP at 1-8. As will be established below in Section III.2(b), this outlandish and insupportable categorical exclusion precludes the State from developing, evaluating and selecting alternatives in the manner required by the NRDA Rule.

2. The Restoration Determination Plan Violates The NRDA Rule's Alternative Selection Process, Including The Rule's Mandate That The Cost Of Selected Alternatives Must Not Be Grossly Disproportionate To Use Value.

The NRDA Rule mandates a two stage alternative selection process. First, it requires natural resource damage trustees to "develop a reasonable number of possible alternatives for the restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the injured resources... ." 43 C.F.R. § 11.82(a). The Rule then requires trustees to evaluate and select among the possible alternatives based on ten enumerated factors. See 43 C.F.R. § 11.82(d). The § 11.82(d) factors analysis conducted in the second stage is also intended to ensure that the costs of selected alternatives are not grossly disproportionate to the use value of the targeted resources.

The State violates the NRDA Rule's mandated alternative selection process in at least four ways. First, it categorically excludes an entire set of alternatives before even reaching the factors analysis stage. Second, it abuses the discretion afforded it in the § 11.82(d) factors analysis stage. Third, it improperly limits and misapplies several of the § 11.82(d) factors. And fourth, the State selects alternatives whose cost is grossly disproportionate to the use value of the resources. These deficiencies in the RDP will be explained in more detail, after a brief discussion of the § 11.82(d) factors themselves.

a) The Factors Enumerated In 43 C.F.R. § 11.82(d) Must Be Considered In The Selection Of Restoration Alternatives And Must Be Employed To Make A Grossly Disproportionate Determination.

43 C.F.R. § 11.82(d) enumerates factors for selecting among restoration alternatives, and was developed in response to State of Ohio v. U.S. Dept. of the Interior, 880 F.2d 432 (D.C. Cir. 1989). The central focus of State of Ohio was the 1986 NRDA Rule's "lesser-of" measure of natural resource damages. Under this measure, natural resource damages liability was limited to the lesser of restoration costs or diminution of use values. State of Ohio invalidated the lesser-of measure of natural resource damages, holding that CERCLA expresses a "preference for restoration costs [defined as the cost of restoration, rehabilitation, replacement and/or acquisition of an equivalent resource] as the measure of recovery in natural resource damage cases." Id. at 459.

State of Ohio recognized, however, that in some cases restoration may involve a "grossly disproportionate cost to use value", and therefore "warrant a different standard." Id. Thus, State of Ohio did not, by invalidating the lesser-of measure, take issue with the basic idea that restoration need not always be accomplished:

> What is significant about Interior's rule is the point at which it deems restoration "inefficient." Interior chose to draw the line not at the point where restoration becomes practically impossible, nor at the point where the costs of restoration becomes grossly disproportionate to the use value of the resource, but rather at the point where restoration cost exceeds -- by any amount, however small -- the use value of the resource. Thus, while we agree with DOI that CERCLA permits it to establish a rule exempting responsible parties in some cases from having to pay the full cost of restoration of natural resources, we also agree with petitioners that it does not permit Interior to draw the line on an automatic 'which costs less' basis.

Id. at 443-44 (emphasis added). See also id. at 456 (restoration need not be required where "restoration is infeasible or where its cost is grossly disproportionate to use value").

Ultimately, then, State of Ohio preserved the requirement that economic efficiency be considered in natural resource damages assessments. This attention to economic efficiency is continued in DOI's post-State of Ohio Rulemakings, and particularly in 43 C.F.R. § 11.82(d)'s alternative selection factors. In fact, the § 11.82(d) factors encompass the grossly disproportionate determination outlined in State of Ohio:

> [T]he proposed revision would require that all of the various factors listed be considered by the trustee in selecting the most appropriate alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources. These factors when considered together would encompass the "grossly disproportionate" determination suggested by the court.

56 Fed. Reg. 19758.

The 1994 NRDA Rulemaking emphasizes this function of the § 11.82(d) factors. There, DOI provided the following response to comments arguing for a grossly disproportionate exception to the measure of natural resource damages:

> This rule neither requires nor authorizes trustees to pursue intensive activities to restore or rehabilitate an injured resource if such activities would be impractical, inordinately expensive or unjustifiably dangerous. Under the rule, trustee officials evaluate a range of alternatives, including an alternative based on natural recovery, under a set of factors, including technical feasibility, cost-benefit considerations, cost-effectiveness, and potential for additional injury.

59 Fed. Reg. 14271 (emphasis added).

With the critical nature of the § 11.82(d) factors in mind, the specific factors are:

(1) technical feasibility;

(2) the relationship of the expected costs of the proposed actions to the expected benefits from the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources;

(3) cost-effectiveness;

(4) the results of any actual or planned response actions;

(5) potential for additional injury resulting from the proposed actions, including long-term and indirect impacts, to the injured resource or other resources;

(6) the natural recovery period;

(7) ability of the resource to recover with or without alternative actions;

(8) acquisition of equivalent land for Federal management where restoration, rehabilitation, and/or other replacement of land is not possible;

(9) potential effects of the action on human health and safety; and

(10) consistency with applicable Federal and State laws and policies.

59 Fed. Reg. 14284-85.

As established above, a careful analysis of alternatives based on the § 11.82(d) factors is critical to the NRDA Rule's alternative selection process. Yet the § 11.82(d) factors analysis attempted by the State in the RDP was doomed before it even began.

b) The State's Preference For Restoration Biases Any Attempt To Conduct A § 11.82(d) Factors Analysis.

The State, by categorically eliminating consideration of acquisition of alternative resources, biases the first stage of the alternative selection process, making proper completion of the second stage -- the § 11.82(d) factors analysis -- impossible. In other words, by eliminating at the outset all acquisition alternatives and any alternatives which do not remove the source of hazardous substances, the State undermines the deliberative function of the § 11.82(d) factors, and makes any true comparison among the full range of alternatives impossible. Instead, the State cynically and superficially manipulates the § 11.82 factors not to evaluate and select among a wide range of alternatives which would restore lost resource services, but rather to rubber stamp the arbitrary decisions regarding alternatives it previously made. This is not the function that the § 11.82(d) factors were designed to serve. See 43 C.F.R. § 11.82; 56 Fed. Reg. 19757.

c) The State Abuses The Discretion Afforded It In The § 11.82(d) Factors Analysis Process.

The State claims that trustees have flexibility in weighting the § 11.82(d) factors. See RDP at 1-8. However, the manner in which this discretion is exercised must be documented. As DOI stated in the 1991 NRDA Rulemaking:

> The Trustee is required to explain, in the Report of Assessment, the reasoning for giving greater weight to certain factors.

56 Fed. Reg. 19757. Similarly, DOI stated in the 1994 NRDA Rulemaking that:

> The rule provides a number of protections against potential abuses of discretion by trustee officials. Trustee officials are required to document their rationale for selecting a particular alternative [in both] the Restoration and Compensation Determination Plan...and the Report of Assessment.

59 Fed. Reg. 14273. Disregarding the above authority, the State makes a general claim to flexibility, but nowhere does it explicitly discuss or defend its relative weighing (in some cases complete disregard) of the prescribed factors.

d) The State Misapplies Specific Factors When Attempting To Conduct A § 11.82(d) Factors Analysis.

Compounding the above problems, the State misapplies a number of the specific § 11.82(d) factors, including the cost-effectiveness factor, the results of response actions factor, the additional injury factor, and the human health and safety factor.

When applied properly, the cost-effectiveness factor is designed to enable comparison of alternatives that produce the same or similar benefits. Under the NRDA Rule:

> "Cost-effective" or "cost-effectiveness" means that when two or more activities provide the same or a similar level of benefits, the least costly activity providing that level of benefits will be selected.

43 C.F.R. § 11.14(j) (emphasis added). The importance of the "similar level of benefits" phrase in this definition was highlighted in the 1994 NRDA Biennial Review Rulemaking:

> Use of the phrase "same or similar" [in the definition of cost-effectiveness]...reflects the fact that in the damage assessment context trustee officials will often be comparing methods that do not produce exactly the same benefits.

59 Fed. Reg. 52755. Similarly, the 1986 NRDA Rulemaking provided:

> In many cases benefits may not be exactly the same, but may be similar in nature; cost-effectiveness should hold in these cases.

51 Fed. Reg. 27695, cited in the 1993 NRDA Rulemaking, 58 Fed. Reg. 39343.

Although other § 11.82(d) factors, including the recovery period factor, may be looked to in determining whether two alternatives provide a similar level of benefits, those factors should not be used to circumvent the cost effectiveness factor. See RDP at 1-9. Thus, the State goes too far in claiming that "given two alternatives that will result in significantly different rates of recovery..., cost-effectiveness cannot be used to compare the two." RDP at 1-9. This blanket rule, stated without support, applies too narrow a meaning to the term "cost-effectiveness", effectively eliminating the "similar level of benefits" concept included within the term's definition. See 43 C.F.R. § 11.14(j); 59 Fed. Reg. 52755; 58 Fed. Reg. 39343; 51 Fed. Reg. 27695.

Moreover, the State's improperly narrow conception of the cost-effectiveness factor provides it with a convenient excuse to avoid considering the factor altogether. In fact, this is exactly what the State does. Each and every time the State evaluates alternatives for its nine different geographic areas, the State claims that it cannot distinguish between alternatives on cost-effectiveness grounds, because the alternatives do not provide a similar level of benefits. See RDP at 2-10, 3-10, 4-14, 5-8, 6-5, 7-10, 8-13, 9-15, and 10-11.

By way of example and without limitation, the State applies this "logic" in selection of Alternative 3A for Area One Groundwater and Surface Water Resources over less costly (but similarly misguided) alternatives. Under the State's analysis, resources and services will not be restored to baseline under any alternative. RDP at 3-7. The State reports that there are diffuse surface and subsurface sources of metals, the location of which is unknown which presently impact groundwater quality. Nevertheless, the State justifies the expenditure of $59.7 million dollars in a futile attempt to improve the alleged condition of the resource and accelerate the time frame for restoration to a mere 200 years in portions of the contaminated aquifer.[4] RDP at 3-7.

Despite the State's characterization otherwise, the same level of benefit is achieved under each alternative considered. According to the RDP, none of the alternatives achieve baseline and none have a reasonable probability of restoring water quality to drinking water standards within the area of injury defined by the State. Thus, application of the cost-effectiveness factor as envisioned and defined by DOI would point toward selection of the least costly alternative. Instead, the State proposes removal and reconstruction of the City-County Shop complex, excavation of vast areas in Butte, and expansion of existing or creation of new disposal areas. Given the results-oriented strategy which was devised to inflate damages, it is no wonder the State elects to ignore cost-effectiveness in its evaluation of alternatives.

The State also fails to properly apply the "results of response actions" factor. As discussed below in Section III.B.3., the State's proposed and selected alternatives ignore or minimize the extent to which response actions will restore resource services to baseline.

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[4] In passing, ARCO notes that the geographic area encompassed by this alternative is within the service territory of the Butte Water Company and subject to the prohibition on development of new groundwater supply wells pursuant to local ordinance. The fact that there is no committed use of groundwater for water supply within this area is germane to consideration of the value of the resource services to be restored under any restoration alternative.

Two other § 11.82(d) factors misapplied by the State are the "potential for additional injury" factor and the "human health and safety" factor. In applying these factors, off-site impacts should be considered. As DOI explained in the 1993 NRDA Rulemaking:

> [The potential for additional injury] factor is designed to address a broad range of possible effects on the injured resource and other resources, which collectively comprise the environment.

58 Fed. Reg. 39344 (emphasis added). Yet the State ignores off-site impacts altogether. For example, the State fails to address where it will find borrow sources sufficient to fill in the excavations proposed by various alternatives. Obtaining sufficient borrow sources and creating new waste repositories degrades off-site resources, in essence injuring one resource to restore another. Similarly, transportation of waste materials for off-site disposal, as proposed in several of the alternatives selected by the State, may impact human health and safety, given the volume of material and type of equipment involved. These issues are largely ignored in the State's analysis.

These examples are not intended to be exhaustive. Rather, they are provided to illustrate the way in which the State manipulates the § 11.82(d) factors to avoid the NRDA Rule's mandate that trustees carefully evaluate and select among a wide range of restoration alternatives.

e) The State Selects Alternatives With Grossly Disproportionate Cost To Use Value.

As discussed above, the § 11.82(d) factors provide the means for determining whether restoration, rehabilitation, replacement, and/or acquisition alternatives are grossly disproportionate to "use value" -- in State of Ohio terms -- or to "the lost value of the resource" or "the value of the services lost" -- in DOI terms. See, respectively, State of Ohio, 880 F.2d at 459; 59 Fed. Reg. 14271; 56 Fed. Reg. 19758. The flaws in the State's § 11.82(d) factors analysis also undermine the required grossly disproportionate determination.

In particular, alternatives which focus solely on restoration of the resource will often be grossly disproportionate under the § 11.82(d) factors, and particularly under factor (2), which examines the relationship of expected costs to expected benefits. In such a case, the trustee must look to other alternatives involving rehabilitation, replacement, and/or acquisition of equivalent resources. As DOI explained in the 1994 NRDA Rulemaking:

> [I]f the costs of implementing a particular alternative do greatly exceed the lost value of the resource, trustee officials need not eliminate restoration, rehabilitation, replacement, and/or acquisition of equivalent resources as a basis for damages but should instead select a less costly method of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources.

59 Fed. Reg. 14271. Accord, 58 Fed. Reg. 39334 ("if the costs of implementing [a] particular methodology do greatly exceed the compensable value of the resource, trustee agencies...could instead select a different methodology").

The State's flawed § 11.82(d) factors analysis, driven by the unfounded bias for physical restoration, has led to the selection of alternatives for which the cost is grossly disproportionate to the value of the services the resource may provide. Examples include the alternatives selected for Butte, Area One and the Montana Pole and Treating Plant. Each is driven by two goals, neither of which is practical or justified: first, to restore groundwater where it may not be technically feasible; and, second, to meet a phantom demand upon the resource to provide services as a water supply. Again, these examples are not intended to be exhaustive. Rather, they are provided to illustrate the State's failure to develop, consider and select alternatives in the manner required by the NRDA Rule.

3. The Restoration Determination Plan Fails To Fairly Consider The Results Of Response Actions, Violating The Basic Mandate That Natural Resource Damages Must Be Residual To Response Actions.

a) The NRDA Rule Mandates That Natural Resource Damages Must Be Residual To Response Actions.

The NRDA rulemakings repeatedly emphasize that natural resource damages are residual. The NRDA Rule provides:

> Natural resource damages are the residual to be determined by incorporating the effects, or anticipated effects, of any response actions. ... If response actions will not be completed until after the assessment has been initiated, the anticipated effects of such actions should be included in the assessment.

43 C.F.R. § 11.84(c)(2) (emphasis added). The NRDA Rule further states that it:

> provides a procedure by which a trustee can determine compensation for injuries to natural resources that have not been nor are expected to be addressed by response actions conducted pursuant to the NCP.

43 C.F.R. § 11.10 (emphasis added). Cf. 59 Fed. Reg. 14262 (damages may be recovered for injuries and losses "that are not fully remedied by response actions"); accord, 51 Fed. Reg. 27681.

The NRDA Rule also explicitly incorporates the residual damages concept into its definition of restoration:

> "Restoration"...means actions taken to return an injured resource to its baseline condition...when such actions are in addition to response actions completed or anticipated, and when such actions exceed the level of response actions determined to be appropriate to the site pursuant to the NCP.

43 C.F.R. § 11.13(ll) (emphasis added).

Moreover, as discussed above, among the alternative selection factors which the trustee must consider is a factor focusing on "[t]he results of any actual or planned response actions."

43 C.F.R. § 11.82(d). DOI explained in the 1991 NRDA Rulemaking, in which § 11.82(d) was first proposed, that addition of this factor simply "represent[ed] considerations already inherent in the existing rule." 56 Fed. Reg. 19761. Similarly, in the 1993 NRDA Rulemaking, DOI stated that "[the existing rule] adequately ensure[s] that natural resource damages are only recovered for residual injuries." 58 Fed. Reg. 39344.

Thus, throughout its development, the NRDA Rule has consistently and adamantly required that restoration damages be residual to response actions.

b) The Restoration Determination Plan Proposes Alternatives Which Would Effectively Ignore Or Undo Response Actions.

Despite the NRDA Rule's residual mandate, the State proposes and selects alternatives which minimize or ignore the extent to which response actions will restore resource services to baseline.

The State's failure to fairly consider the results of response actions is illustrated by the manner in which the State has addressed the Streambank Tailings and Revegetation Studies (STARS). STARS treatment effectively restores riparian soils and fosters reestablishment of native vegetation. This treatment technique, together with selective relocation (local removal) of tailings, has been demonstrated to effectively and permanently restore resource services provided by riparian soils and vegetation, stabilizing and protecting streambanks from erosion. Despite the documented success of STARS treatment techniques, the RDP proposes alternatives for Silver Bow Creek and the Clark Fork River that ignore and, if implemented, would effectively undo this remedy. See RDP at 4-6 through 4-13, 9-8 through 9-14.

The State's decision to propose alternatives which would effectively undo STARS is apparently based on the State's unsupported position that restoration alternatives need not necessarily be consistent with response actions. See RDP at 1-7; 59 Fed. Reg. 14274. However, while the NRDA Rule may not require strict consistency between response and restoration actions, this does not mean that trustees may undo a response action that has been

evaluated under the NCP criteria, commented upon by the public, and selected by EPA. Such an approach contravenes the fundamental premise that restoration must be residual to response actions. Indeed, section 113(g) of CERCLA, added by the 1986 SARA amendments, does not even allow an action for natural resource damages to be commenced until a remedial action is selected by EPA. Congress could not have intended for trustees to wait until selection of a remedial action to commence a natural resource damage action, only to have the trustees undo the very remedial action selected.

Like CERCLA, the NRDA Rule clearly contemplates that trustees will not develop or select restoration alternatives that undo remedial actions. To the contrary, the Rule states that restoration actions "would be in addition to response actions completed or anticipated pursuant to the NCP." 43 C.F.R. § 11.82(b)(1). By way of explanation, DOI noted in the 1986 Rulemaking that:

> This concept of natural resource damages as residual should prevent the development of two separate actions to ameliorate the same situation.

51 Fed. Reg. 27681. This cautionary explanation directly implicates the State's alternatives for Silver Bow Creek and the Clark Fork River. Alternatives which will undo the successful restoration of resource services through application of STARS or similar treatment techniques are "separate actions to ameliorate the same situation" and therefore must not be pursued.

The State's logic for rejection of STARS is unfounded for other reasons as well. Should STARS be selected and implemented as a component of a remedial action for the Streamside Tailings operable unit or the Clark Fork River, which is ARCO's expectation, there will be a concomitant, enforceable obligation to maintain the remedy. Moreover, the five year review provision under section 121(c) requires periodic assessment of the remedy for the express purpose of ensuring that the remedy as implemented and maintained continues to protect human health and the environment. CERCLA further authorizes the President to take or require such actions in accordance with sections 104 or 106 to ensure that the remedy is

protective. Thus, the State may not assume for purposes of its analysis of the alternatives that any component of a remedy will fail and that the failure will not be remedied.[5]

In the State's Decisionmaking Analysis for Chapter 4 of the RDP, the State concludes that "NRDLP simply could not select a remedy which utilized STARS". This statement reflects the depth of the State's misunderstanding of its trustee role in the CERCLA process; the trustee does not select remedies through the process set forth under the NRDA Rule. Neither section 107(f) nor the NRDA Rule usurp the process established under section 121 of CERCLA, as implemented by the NCP, for evaluation and selection of remedial actions. Thus, the State's arbitrary rejection of treatment technologies and remedial strategies developed pursuant to the NCP is yet another example of why the State's approach to formulation of restoration alternatives is fatally flawed and cannot support the State's demand for payment.

c) The Restoration Determination Plan Fails To Consider The Value Of Amenities To Be Provided In Connection With Response Actions.

Amenities which will benefit the community are part of selected and planned remedial actions at many of the Clark Fork River sites, yet the State failed to consider these amenities in developing the RDP. For example, the State failed to consider the value of the Jack Nicklaus Signature Golf Course to the Anaconda community and the State's citizens, as well as the value of public access to recreational opportunities afforded by the Warm Springs Ponds. Similarly, no consideration was given to the interpretive parks with interconnecting trails which are planned for Butte and Anaconda and which will highlight the importance of mining to regional history. Open space and trails will integrate these parks with recreational access protected in a conservation corridor, subject to landowner approval, which is under

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[5] For example, the RDP provides in discussion of residual injury for Silver Bow Creek Aquatic and Riparian Resources:

> At the present time, NRDLP believes there is a risk that over time the neutralization capacity of lime-amended soils will be depleted, causing pH levels to decrease and vegetation to die. In such an event, large areas of revegetated floodplain would revert to the present devegetated condition.

consideration for Silver Bow Creek. These dedicated developments will be managed for the benefit of the public as part of a comprehensive institutional control program funded by ARCO in each of these communities. A trail system along the Clark Fork River riparian corridor in the Milltown area is also under consideration.

It is undisputed that the above described amenities will provide a stream of educational and recreational services to the region and, thus, economic welfare. As the RDP acknowledges, the NRDA Rule requires that the "effects of response actions shall be factored into the analysis of damages." RDP at 1-6, citing 43 C.F.R. §11.84(c)(2). Notwithstanding this acknowledgement, the RDP has not taken the benefits of these amenities into account in any manner. Because the amenities did not fit within the limited scope of alternatives considered by the State, they were ignored and excluded from consideration in estimation of damages. These amenities clearly provide services to society and must be considered as an offset in determining residual restoration damages, if any.

IV. CONCLUSION.

In an apparent attempt to secure a rebuttable presumption for its natural resource damage assessment, the State claims that its RDP was prepared in accordance with the NRDA Rule. This claim does not withstand scrutiny. When measured against the NRDA Rule's explicit requirements, the RDP is fundamentally flawed.

In brief, the RDP rests upon an improper calculation of baseline, highly exaggerated injury determinations, and an untenable position with respect to the scope of natural resource damage trusteeship. Compounding these foundational problems, the RDP violates the NRDA Rule's restoration alternative selection process in numerous and significant respects. Contrary to the Rule's mandates, the State has adopted a preference for physical restoration of resources which unduly restricts the range of alternatives considered, engaged in a faulty analysis of the alternatives considered, selected alternatives with grossly disproportionate cost to use value, and failed throughout to fully and fairly account for the effects of response actions. These

flaws, and others, undermine the credibility of the State's restoration analysis and render the RDP useless as a planning tool under the natural resource damage assessment process.

This document is not ARCO's complete and comprehensive response to the State's RDP. ARCO's expert reports, which will be submitted in accordance with the Court's Scheduling Order, will provide more detailed technical review of the State's assumptions, presumptions and conclusions set forth in the RDP. The State is obligated to respond to this document and the further analysis to be provided in ARCO's expert reports.

Finally, the RDP is based on an assumption of coordination between response and restoration activities. See RDP at 1-7. This assumption is necessary to implement CERCLA's strict prohibition against double recovery for natural resource damages. See CERCLA § 107(f); 42 U.S.C. 9607(f). The State admits that if coordination does not in fact occur, the RDP would require revision: "real life inconsistency between a response action and a restoration action...would require that this plan be revised since the operative assumption proved incorrect." RDP at 1-9. Should any significant revisions to the RDP be proposed, the public must be given a reasonable opportunity to comment upon the revised document.

ARCO

Environmental Affairs - Legal
555 Seventeenth Street
Denver, Colorado 80202
Telephone 303 293 4520
Facsimile 303 293 4295

Richard O. Curley, Jr.
Senior Attorney

Admin Record

ADMINISTRATIVE RECORD

February 15, 1995

VIA FAX

Robert G. Collins, Esq.
Assistant Attorney General
Natural Resource Damage Program
Department of Justice
State of Montana
P.O. Box 201425
Helena, MT 59620-1425

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NATURAL RESOURCE
DAMAGE PROGRAM

Re: Request for Extension of Time to Submit Comments on RDP

Dear Rob:

This is to confirm that portion of our telephone conversation yesterday in which I requested an extension of time for ARCO to submit comments on the State's Restoration Determination Plan for the Upper Clark Fork Basin dated January 1995. ARCO requests a two-week extension of the current deadline from February 21, 1995 through March 7, 1995. Please provide me with the State's response as soon as possible.

Sincerely,

Richard O. Curley, Jr.

ROC/dl

c: S. H. Foster, Esq./Holland & Hart-Billings
K. Ward, Esq./Harding & Ogborn

RCO

Environmental Affairs - Legal
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Richard O. Curley, Jr.
Senior Attorney

ADMINISTRATIVE RECORD

March 9, 1995

VIA FAX

Robert G. Collins, Esq.
Assistant Attorney General
Natural Resource Damage Program
Department of Justice
State of Montana
P.O. Box 201425
Helena, MT 59620-1425

Re: Confirmation of Extension of Time to Submit Comments on RDP

Dear Rob:

I write to confirm our telephone conversation of March 7, 1995, in which you notified me that the State was granting to other parties and extending to ARCO an extension of time to submit comments on the State's Restoration Determination Plan through March 23, 1995. In response to a question from me, you clarified that meant that the State would except comments postmarked no later than March 23, 1995. If my understanding is in any way incorrect, please contact me at the address or telephone number listed above.

Very truly yours,

Richard O. Curley, Jr.

ROC:dl

Enclosures

c: Stephen H. Foster/Holland & Hart, MT — VIA FAX
Kevin Ward/Harding & Ogborn — "

THE CONFEDERATED SALISH AND KOOTENAI TRIBES
OF THE FLATHEAD NATION
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(406) 675-2700
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Joseph E. Dupuis - Executive Secretary
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NATURAL RESOURCE
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TRIBAL COUNCIL MEMBERS:
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Rhonda R. Swaney - Vice Chairwoman
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Lloyd Irvine - Treasurer
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Henry "Hank" Baylor
D. Fred Matt
Donald "Donny" Dupuis
Mary Lefthand

February 17, 1995

State of Montana
Natural Resource Damage
Litigation Program
Old Livestock Bldg.
1310 E. Lockey
Helena, Montana 59620-1425

ADMINISTRATIVE RECORD

Re: State Restoration Determination Plan

Dear Sir or Madam:

Thank you for providing the Tribes with a copy of the State's suggested plan for restoration of certain injuries attributable to the release of hazardous substances to the Clark Fork. The plan, with attachments, was received January 23, 1995. You have indicated that comments must be received in Helena no later than February 21, 1995. It is our understanding that the Department of Interior trustee agencies are presently considering whether to request an extension of time to review this plan and the lengthy accompanying reports and damage estimation which are incorporation by reference therein. It is also our understanding that various members of the public may also make such a request.

In total, some seven reports comprise the State's plan. While we are, of course, already familiar with the State's injury and damage reports issued earlier, this is our first opportunity to familiarize ourselves with the amendments the State has formally made to these reports. In addition, the Tribes are now in the process of completing our own "Data Evaluation and Preliminary Estimate of Damages" to Tribal interests in the Clark Fork Basin attributable to the release of the same hazardous substances which are the subject of your plan. Finally, EPA has yet to complete its remedy selection for the vast geographic majority of the Clark Fork operable units. EPA's remedy selection can be expected, at a minimum, to inform restoration plans proposed by any trustee.

For these reasons, the Tribes' comments here are unavoidably cursory. We therefore reserve the opportunity to amend them at such time as key pieces of information necessarily precedent to a full and complete analysis of the State's restoration plan become available. Additionally, we wish to be notified of any extension of time granted at the request of co-trustee Department of Interior agencies or the public.

Our comments follow. We look forward to working with you, the public at large, the Federal natural resource trustees, and, of course, the Environmental Protection Agency on the significant endeavor to restore the Clark Fork.

Sincerely,

Rhonda C. Swaney
CONFEDERATED SALISH & KOOTENAI TRIBES
Rhonda C. Swaney
Vice Chairwoman,
Tribal Council

cc: Department of Interior
Environmental Protection Agency
Clark Fork-Pend Oreille Coalition

February 17, 1995

COMMENTS: STATE OF MONTANA'S RESTORATION DETERMINATION PLAN
UPPER CLARK FORK RIVER BASIN

by

The Confederated Salish and Kootenai Tribes of the Flathead Reservation
P.O. Box 278
Pablo, Montana 59855

to

The Montana Natural Resources Damage Litigation Program
Old Livestock Building
1310 East Lockey Avenue
Helena, Montana 59620

Because of the short period for comment, the following observations are brief and general. The Confederated Salish and Kootenai Tribes (the "Tribes") reserve the opportunity to submit additional comment as warranted. The preliminary Tribal comments are as follows:

I. Clarifications

The incorporated document entitled "Introduction to Report of Natural Resource Damage Assessment Clark Fork River Basin NPL Sites" contains several errors in need of correction in order for the Restoration Determination Plan to be read with a full understanding. For example, it is accurate that the State has filed Montana v. ARCO, CV-83-317-HLN-PGH, but it is also pertinent that the Tribes sought to intervene in that litigation in October, 1994, at the conclusion of a series of extended stays, the most recent of which concluded October 15, 1994. That motion with its attached proposed complaint in intervention, incorporated ed here by reference as Exhibits A and B, respectively, is pending. Introduction, at pp 1, 13 and 14, fails to accurately depict the Tribes' interests in the Clark Fork Basin

Of particular concern is the State's misconstruction of facts found at Footnote 3, p. 14. The Tribes have never "led the State to believe that they were not interested in the NRDA." See, Exhibit C, Affidavit of Tribal Attorney Patrick L Smith, incorporated here by reference. To the contrary, the Tribes have made it abundantly clear that they assert a separate trusteeship interest in the Clark Fork and have repeatedly, in correspondence and in conversation, made this plain to the State. Similarly, the United States, through the Department of Interior, has advised the State of its own separate assertion of trusteeship interests in the Clark Fork. Of note is the DOI's letter, attached as Exhibit C, referred to at p 14 of the Introduction. While that letter does commend Montana, it also reiterates a continuing concern as to the preservation of other trustees' claims; it requests Montana to "clearly define the limits of (its) claim, and explicitly (exclude) lands and other natural resources owned by the United States." (Exhibit D.)

In short, the State's characterization of itself as "lead trustee for all of the natural resources for which it has asserted trusteeship. . .(which) includes all ground water, surface water, stream bank and bed sediments, air, macroinvertebrates, and fish and wildlife within the Upper Clark Fork River Basin" (Introduction, p. 13) is at best inaccurate and certainly misleading. In fact, the State has never been selected as "lead trustee" by all the trustees, in accord with 43 C.F.R. § 11.32. Nor is the State the de facto lead trustee. Please review the Tribes' lengthy correspondence to you on this point dating back to November 30, 1993.

II. Trustee Coordination.

Current DOI regulations require the State to evaluate each possible alternative for consistency with, among other things, consistency with relevant tribal policies and laws. 43 C.F.R. § 11.82(d)(9) and (10). These regulations further provide that a trustee's restoration plan may be expanded to incorporate requirements of other laws, specifically including tribal laws. (59 Fed. Reg. 14262 at 14284, promulgated March 25, 1994) In evaluating factors for determining the State's suggestion of restoration alternatives at each site, the State represents that neither Federal nor Tribal laws or policies are "implicated" (e.g., Introduction, page 2-11). The assertion is mistaken Federal and Tribal laws and policies are directly affected by many of the assumptions underlying the Plan and, at every step, by the choice of alternatives presented for consideration and the selection of preferred alternatives The failure to consider Tribal rights,

interests, and policies and the Federal law that mandates their consideration is so fundamental as to require revision of the document.

A central Federal law affecting restoration determinations for the Upper Clark Fork is Article III of the Hellgate Treaty of 1855 (Treaty with the Flatheads, etc , 12 Stat. 975) which, among other things, recognizes and guarantees the retention by the Tribes and its members of their aboriginal right to take fish at usual and accustomed places, including the Clark Fork River Basin in Montana, in common with the citizens of the territory. The meaning of this Treaty fishing right has been interpreted in cases dealing with identical language in contemporaneous treaties with other tribes to include the right to take approximately fifty per cent of the harvestable native and nonnative fish, the right of access and occupational servitudes upon and along the banks of the Clark Fork and its tributaries and within the floodplain, and the ability to assure the protection of the quantity and quality of the riparian and aquatic habitat necessary to render such fishing and usufructuary rights meaningful. Each of these Tribal rights and interests has been grievously damaged by the century-long, continuous release of hazardous material into the headwaters of the Clark Fork.

CERCLA's purpose in expressly including Indian tribes among eligible natural resource trustees (and, derivatively, the purpose of the Department of the Interior in its regulatory requirement that Tribal laws and policies be considered in framing restoration determinations) is precisely to assure the protection of such cherished rights as those reserved by and secured to the Tribes by the Hellgate Treaty The State of Montana has no authority under CERCLA or any other law or theory to act as a natural resources trustee of Tribal Treaty rights within the Clark Fork Basin, though it does have a specific obligation not to impair those rights. Moreover, the State has twin duties here (1) to develop and consider restoration alternatives in light of its co-trustees' laws and policies, and (2) to make a good-faith effort to coordinate its proposals actions with them.

At the outset, the Plan recognizes in theory the need for coordination:

> "To produce maximum gains to the resource, it would be preferable to mesh response and restoration actions This can be achieved only by coordination among the various entities involved--EPA, MDHES, and the Natural Resources

Litigation Program " (p.1-7)

Here, as elsewhere in the Plan, the Tribes are ignored or dismissed as an "entity involved"--in itself a fatal flaw. But even supposing that Tribal and Federal interests had been seriously considered, rather than summarily dismissed, in the preparation of the document, the Plan contemplates a final decision on the State's restoration alternatives prior to completed response action or remedy selection at most of the operable units of the Clark Fork Superfund sites.

In an astonishing bit of wishful thinking, the role of the co-trustees is relegated to rubber stamping. As written, it appears that the State anticipates that EPA, and the Tribes and the other trustees will necessarily adopt the State's preferred alternatives. This suggests molding by EPA of its remediation selections or restoration[1] selections by the Tribes to fit the State's preference. While the Tribes recognize the difficulty with which the State is faced by having to write its Restoration Plan in advance of EPA remediation action on much of the Clark Fork, and before the other trustees (including the Tribes) have completed their own work needed before a restoration plan can be drafted, it again requests the State's cooperation in assisting the Tribes' to preserve their own claims to achieve proper restoration of Tribal resources. This suggests a substantial reworking of the State's Plan.

III. No Provision for Measurement of Results in Resources or Services Restoration.

In general, the Plan fails to give more than superficial treatment to descriptions of resources or services injured, historically or currently, by the releases of heavy metals or other hazardous materials. This is especially true for Silver Bow Creek, Butte Mine Flooding, Lower Area One at Butte, Milltown and the main stem of the Clark Fork

The Plan does not identify the baseline condition of resources and services which are to be restored. The Plan does, however, present a group of alternatives which, it is suggested, will restore services and resources to some level (unspecified) below the baseline. The Plan does not consistently identify the linkage (if any) between resource and service restoration. It is unclear if the assumed level of resource restoration expected to result from the implementation of

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[1] "Restoration" includes restoration, rehabilitation, replacement or acquisition of the equivalent of such natural resources, pursuant to CERCLA § 107(f), 42 U.S.C. 9607(f). The DOI defines "restoration", "replacement", and "restoration" in greater detail 43 CFR § 11.14.

alternatives will provide a comparable level of lost service restoration. It is unclear what restoration end or goal the alternatives were developed to achieve. Due to the lack of definition of both resources and services to be restored, the Plan is deficient.

The Plan summarily disposes of the possibility of developing alternatives for the restoration of lost services with the observation. "Restoration of services is accomplished by restoring resources." (p. 1-4). The Tribes claim lost services of a significant different nature than does the state, and this sweeping statement virtually invites ARCO to invoke a double recovery defense to the Tribes' claim for its own, separate lost uses and services. Moreover, this convenient oversimplification is indicative of the Plan's broad-brushed approach to the discussion of proposed alternatives, a discussion of small assistance to anyone seeking to evaluate them or to suggest modifications.

IV. Restoration to Baseline Conditions and Rejection of other Reparation Strategies

The Plan repeatedly declares that CERCLA's goal of restoring injured resources and lost services to baseline conditions is, for the most part, effectively unreachable in the Upper Clark Fork basin. It states that for many of the contaminants, baseline levels may only be restored after millenia of natural recovery. Nevertheless, the Plan specifically rejects other means of restoring resources and concomitantly replacing lost services. For example, State policies underpinning the deletion of land acquisition from the alternative array available to restore resources or services closer to baseline appears to be (1) that the State already has plenty of public land and (2) that it was decided that, however slight and however longterm, any improvement in the aquatic and terrestrial resources of the poisoned basin was preferable to alternatives which offer fuller possibilities.

As justification for these policies, the State asserts that CERCLA prefers restoration of resources to land acquisition or replacement. Even if this were so, the overriding statutory preference is for restoration of services to baseline, and the very reason for Congress to include land acquisition and replacement of resources as restoration alternatives was to provide for a grotesque situation like the Clark Fork Basin, where restoration of the resources to baseline is measured in geologic, not biologic, time, if at all.

United States Department of the Interior

OFFICE OF THE SECRETARY
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March 23, 1995

Mr. Robert G. Collins
Natural Resource Damage Litigation Program Manager
Department of Justice
Old Livestock Building
1310 East Lockey Avenue
Helena, MT 59620-1425

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NATURAL RESOURCE
DAMAGE PROGRAM

ADMINISTRATIVE RECORD

Dear Mr. Collins:

In response to your letter of January 19, 1995, we have reviewed the Restoration Determination Plan for the Clark Fork River Basin NPL Sites. The Department of the Interior's (Department) technical comments are enclosed with this letter.

We recognize that the State's claim for natural resource damages was filed in Federal district court in 1983, before the SARA amendments took effect. The schedule for your natural resource damage assessment has been established by court order. The United States is not a party to this litigation. The Department is undertaking a separate orderly process to assess injuries to natural resources under its CERCLA trusteeship, and will assert its claims based on residual injuries at the appropriate time. Resolution of the State's pre-SARA litigation does not bind other trustees, nor does it constrain our independent authority to seek natural resource damages for injuries to resources under our trusteeship that are not adequately restored under the State's Plan.

The other natural resource trustees have authorities and responsibilities under CERCLA that sometimes overlap with and sometimes are separate from the State's. The natural resources under the trusteeship of the United States and the Confederated Salish and Kootenai Tribes (Tribes) are defined by the same provision that defines the State's claims:

> The term "natural resources" means land, fish, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States (. . .), any State or local government, any foreign government, any Indian tribe, or, if such resources are subject to a trust restriction on alienation, any member of an Indian tribe.

16 U.S.C. § 1601(16).

The Department manages certain lands in the Clark Fork River Basin, including Grant-Kohrs Ranch and Bureau of Land Management lands. In addition, the Department has natural resource trustee responsibilities relating to its authorities under statutes including, but not limited to, the Endangered Species Act and the Migratory Bird Treaty Act.

The Tribes retain rights to natural resources throughout the Clark Fork River Basin under the Treaty of Hellgate and numerous court cases. They are acting on their own behalf as a trustee for natural resources under CERCLA.

The Natural Resource Damage Assessment regulations require the State to evaluate each alternative for consistency with relevant tribal policies and laws. 43 C.F.R. §§ 11.82(d)(9) and (10). However, for all alternatives in each of the nine geographic areas, the Plan simply asserts that "There are no applicable federal, state or tribal policies which would be implicated by any of these alternatives." To substantiate these statements, the Plan should be revised to include documentation of consultation with the Confederated Salish and Kootenai Tribes specifically regarding applicable Tribal laws and policies, including any correspondence from the Tribes concurring in these findings.

For those resources under the trusteeship of more than one entity (e.g., threatened and endangered species and their supporting ecosystems), it is the collective responsibility of the natural resource trustees to provide for the restoration, rehabilitation, or replacement of natural resources and the services they provide which have been injured, lost, or destroyed as a result of releases of hazardous substances. To the extent that the natural resource damage assessment and claim of one trustee do not accomplish this, the other trustees may and should bring additional claims.

While the State's Restoration Determination Plan (Plan) describes the types and overall magnitude of restoration actions to be implemented, it does not specify the location or extent of actions addressing natural resources under the trusteeship of the Department of the Interior. The Plan does not clearly link the specific baseline condition of resources to the services to be restored. Thus, the extent to which the State's Plan would achieve restoration of these resources and services is unknown. We consequently are unable to evaluate in detail the extent to which the Plan provides for adequate restoration. There are, however, some areas in which the State's Plan clearly will not accomplish full restoration of lost natural resources and services under the Department's trusteeship. The Department anticipates providing further comments as additional, more detailed information on the State's natural resource restoration plans becomes available.

Restoration actions that take place on lands under the administrative jurisdiction of the Department must be planned in consultation and implemented with the approval of the appropriate land management Bureau. In the Clark Fork Basin, such lands include Grant-Kohrs Ranch and Bureau of Land Management lands. We will be pleased to cooperate with the State on these efforts.

The Plan declares that CERCLA's goal of restoring injured resources and lost services to baseline conditions is, for the most part, unreachable in the Upper Clark Fork River basin. It indicates that, even after accomplishment of the proposed restoration actions, natural resources and services would not return to baseline levels for thousands of years. In view of this, we would encourage the State to consider additional actions which would restore lost resources and services in a shorter period of time.

The enclosed comments represent the views of the Department of the Interior, and are provided on a technical assistance basis only. They do not constitute a position the Department may take regarding the extent of injury to, loss of, or destruction of natural resources under our trusteeship, nor possible future action on our part to recover damages for such injury, loss, or destruction. They also do not constitute participation in the State's natural resource damage assessment, and should not be construed as such. Moreover, they do not represent the position of the Confederated Salish and Kootenai Tribes, which are acting on their own behalf as trustees for natural resources pursuant to CERCLA § 107(f).

Sincerely,

Robert F. Stewart
Regional Environmental Officer

Enclosure

cc: Confederated Salish and Kootenai Tribes (R. Swaney, M. Yoder)
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NPS/WASO (D. Hamson)
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NPS/Grant-Kohrs Ranch (T. Schetzsle)
OEPC/HQ

TECHNICAL COMMENTS ON THE STATE OF MONTANA'S REPORT OF ASSESSMENT
CLARK FORK RIVER BASIN NPL SITES

GRANT-KOHRS RANCH NATIONAL HISTORIC SITE

General Comments

From the discussion in Section 9 of Plan, we were unable to determine what (if any) specific CERCLA response or natural resource restoration actions are proposed for Grant-Kohrs Ranch National Historic Site (Grant-Kohrs), and thus judge whether baseline conditions would be reestablished within Grant-Kohrs.

For example, the Selected Alternative (9A) indicates calls for removing, reconstructing, and stabilizing "contaminated riverbanks between Warm Springs and Deer Lodge". On the other hand, bank removal "below Deer Lodge" was rejected from further analysis. Grant-Kohrs is immediately downstream from Deer Lodge, if Grant-Kohrs lands are included in the Warm Springs-Deer Lodge portion, the Plan should so state.

Even if Grant-Kohrs lands are included, the Plan still does not discuss actions outside the most visibly contaminated areas in the immediate floodplain, and it is unclear whether the heavily contaminated slickens areas at Grant-Kohrs will be addressed. The discussion on pages 9-7 notes that there are "at least" 13,000 acres of contaminated floodplain, and makes it clear that restoration alternatives are directed at some 4,500 acres which contain "exposed tailings". We believe that natural resource injuries at Grant-Kohrs may extend well beyond this area, yet nothing in the Plan addresses contaminated upland soils, impacts to vegetation, water and special uses of Grant-Kohrs, etc.

Therefore, based on information presented in the Plan (or lack thereof), we conclude that the State's Plan will not accomplish restoration of lost natural resources and services at Grant-Kohrs.

Specific Comments

Page 9-2 - Para 1 - A general statement to the effect that contamination levels decrease with distance from source does not accurately portray the fact that Grant-Kohrs has contaminant levels nearly or equal to source areas upstream. Consequently, actions appropriate for upstream source areas may have application at Grant-Kohrs.

Page 9-7 - Last Para - Again, the premise that contaminant levels decrease with distance is an oversimplification, and should not in itself preclude restoration actions at Grant-Kohrs consistent with removal of contaminant source material and restoration of riparian zone to near baseline conditions.

Page 9-8 - Para 1 - Grant-Kohrs has restricted certain uses of the floodplain in order to prevent additional releases of contaminants. This loss of use will continue until such time as intervention has occurred.

Page 9-16 - Section 9.6.4 - The Plan notes that implementation of restoration actions will result in runoff to surface waters, and states that "Standard practices will be used to ameliorate these impacts." Construction of sedimentation basins during restoration actions to protect Grant-Kohrs is critical. Water taken from the river for irrigation purposes at Grant-Kohrs will contain these same elevated concentrations unless remediating actions are taken. Grant-Kohrs may need an alternate source of water during the period when the river will be contaminated by restoration efforts if sedimentation basins are not constructed. Further, these sediment basins should include monitoring of ground water for contaminants for releases carried through this medium as elements drop out.

Page 9-17 - Section 9.6.6 - This section does not adequately address concerns with human health for exposure to contaminated areas if no intervention. It speaks to clean up efforts but not existing conditions at Grant-Kohrs.

FISH AND WILDLIFE RESOURCES

General Comments

1. Adequacy of the State's Report of Assessment

The State's report does not explicitly address injury to and damages for migratory birds and endangered species; nor does the report specifically address restoration of those resources or the services provided by those resources. Instead, the State has determined and quantified injury to upland and riparian habitats. The State's Restoration Determination Plan has selected alternatives that would include restoration of some of the injured habitats. The damage claim is partially based on the cost of restoring those habitats.

We agree that quantification of injury to migratory birds and endangered species can be based on injury to habitat (i.e., habitat loss) and that a claim can be, in part, based on the cost to restore the injured habitat. However, the State's restoration report was written to develop costs for the restoration claim and does not contain restoration specifics. So, although the State has offered verbal assurances that migratory birds and endangered species will be restored under the State's claim, a formal agreement and more detailed habitat restoration plans implementing these commitments will be required before the Department can concur with the State's determination.

We also believe that the State's damage claim may be premised on conservative estimates of injury and the damage amounts may be underestimated because:

A. The injury and restoration reports address only riparian and upland areas exhibiting gross injury. The damages for these areas are calculated based on the restoration of only the grossly injured areas, those areas with essentially no vegetative cover and extensive erosion. The habitat (service) losses and restoration costs associated with less grossly injured upland areas may be substantial. In addition, the restoration alternatives do not address the interim damages that would accrue between the time restoration is deemed complete and the return to full service flow for that system. That is, restoration may be deemed complete with the initial establishment of vegetation, but the system will not provide full ecological services until the forest, grassland and riparian systems have matured, which, particularly for the forest system, will require substantial time.

B. The riparian habitat injury quantification does not include the Warm Springs Ponds Active Area and Inactive Area Operable Units and the Warm Springs Creek floodplain. Although remediation of the Warm Springs Ponds may be sufficient to restore some services to pre-release conditions, the restored services would not be the same as pre-release services. At a minimum, past lost use and interim lost use of services at these Operable Units should be addressed. Neither EPA's planned remediation nor the State's restoration for the Old Works/East Anaconda Development Area will restore, or provide services equivalent to, the pre-release riparian/wetlands habitat of the Warm Springs Creek floodplain near Anaconda.

Specific Comments

Area One Groundwater. The State's recommended restoration in conjunction with EPA's removal actions may result in restoration of migratory birds and endangered species, but detailed restoration activities are not discussed in the restoration plan. Although little residual injury is expected, the interim injury occurring during the period between the initial establishment of the riparian habitat and that habitat's return to full services has not been evaluated.

Silver Bow Creek. The State recommends extensive excavation of contaminated material and backfilling with clean material. As with Area One, the recommended alternative may restore injured resources under the trusteeship of the Department. More detailed information is required for that determination. Interim injury may be significant since the return to full wetland services will take years. Residual injury is not expected to be significant.

Smelter Hill-Mt. Haggin Uplands. As discussed above, the State has assessed injury and determined damages for only the grossly injured areas; the extent of injury and damage amount are probably underestimated. Thus, residual injury to

these "lesser impacted" areas, upland migratory bird habitat will remain after restoration. In addition, the interim injury will be significant because the upland areas, especially the forested areas, will not provide full services until decades after restoration.

Anaconda (Opportunity) Groundwater. The State recommends natural recovery for this resource area. Thus, residual injury would encompass at least 3400 acres of riparian habitat. The State has determined that restoration of the Opportunity Ponds would cost $287 million. In addition to the restoration costs, past and interim lost services should be determined for this site and included in the damage determination. The Warm Springs Creek riparian corridor has been injured by the deposition of hazardous substances. The State has not addressed this area in the Restoration Plan, nor will EPA's proposed remedy restore injured resources.

Clark Fork River. The State has not included the Warm Springs Ponds in the assessment, nor claimed damages to this area. As with the upland areas, only grossly injured areas of the Clark Fork River were claimed. Thus, injury and damages are probably underestimated. Residual injury would consist of the "lesser impacted" areas that would not be restored, and interim injury would continue at the restored areas until full services are restored.

PUBLIC LANDS

The Plan does not specifically mention land ownership, nor the extent of natural resources that are under the jurisdiction of other Trustees. Public lands under the administrative jurisdiction of the Bureau of Land Management (BLM) lie downstream of Deer Lodge, the area addressed largely in Section 9, Clark Fork River Aquatic and Riparian Resources. Although the Plan alludes to tailings excavation, backfilling, recontouring, and revegetation activities for the stream reach between Deer Lodge and Drummond, there is a lack of clarity as to what, if any, restoration activities would be undertaken below Deer Lodge. The BLM has riverbank lands in that stream reach that may very well warrant such activities, and at a minimum, bank stabilization. We also recommend that the BLM tracts should be limed wherever metals levels are high or the pH is less than 4.0.

The specific techniques to be employed during streambank excavations and similar intrusive activities, to prevent excessive siltation and entrainment of hazardous substances and acidity, are not identified. The reader is left in doubt as to the extent of additional or residual injury that will result from these restoration actions, however appropriate they might be.